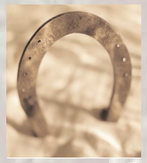
WEST VALLEY RIVERS

NEW RIVER & LOWER AGUA FRIA







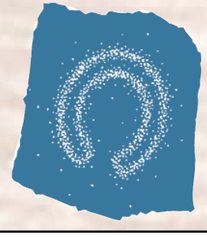

FINAL
WEST VALLEY MULTI-MODAL TRANSPORTATION CORRIDOR MASTER PLAN

JULY 30, 2001

MARICOPA ASSOCIATION of GOVERNMENTS





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West Valley Multi-Modal Transportation Corridor Master Plan

FINAL

JULY 30, 2001

PREPARED FOR THE

MARICOPA ASSOCIATION of GOVERNMENTS

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PREFACE

The West Valley Multi-Modal Transportation Corridor Master Plan (the Plan) identifies a series of proposed projects to take place in and along the New River and Agua Fria River Corridor (Corridor) in the West Valley (see **Map 1, Project Vicinity** and **Map 2, Project Study Area**). The Plan focuses on a 42-mile urban trail project designed to enhance non-motorized alternative modes of transportation opportunities and to improve the quality of life for residents in the West Valley Rivers Basin. The Plan addresses the physical aspects of the rivers and their environment and defines a number of changes to the Corridor to accommodate a series of non-motorized, trail types that respond to the conservation of critical Sonoran Desert riparian resources along the Rivers. The Plan calls for a continuous, shared-use non-motorized transportation trail, preserving critical open space for linear parks, and defines staging areas, gateways, access roads, bridges and other public amenities to support the planned trail system.

The proposed trail will address certain issues affecting the Corridor, and will also have significant value for the individual communities along the Corridor as a floodwater management tool and amenity for alternative modes of transportation. While the improved river channel will continue to accommodate the 100-year flood, the planned trail system and linear parks along the banks will provide neighborhood access to the continuous primary trail designed with a paved material. This continuous trail system will further increase linkages to other community elements along the Corridor and link trip origins and destinations between the various communities. The Plan will re-establish Sonoran Desert landscapes and wildlife habitat along the Corridor, and enhance the environment of adjacent lands. Gateways, staging and parking areas, and adjacent parks will offer other opportunities for cultural and leisure-time activities, and allow movement among neighborhoods and the various elements of the riverpark system.

The physical elements of the Plan can be funded and constructed under a systematic program in which the completion of various elements can be planned and managed. However, there are other equally important elements of the Plan that cannot be totally planned, managed, or even completed. These are the processes - transportation, recreational and educational activities, to name a few, that are generated by the designed environment - that are the basic purpose of the Plan. Like the New River and Lower Agua Fria River itself, these are dynamic in time and variable in direction.

The long-term operational and maintenance management program for the trail system is one of those processes most subject to precise control. Critical trail operation and maintenance programs will involve the full commitment of various communities and land management agencies and most importantly, the Flood Control District of Maricopa County. The New River and Lower Agua Fria River system of trails will only be successful if required inter-governmental agreements are in place that clearly outline the roles and responsibilities of each affected agency. Although the principles behind the Plan are supported to incorporate a non-motorized fully accessible trail system, the short- and long-term operational and maintenance functions of the Corridor will ultimately determine the success of the Plan. Therefore, a total comprehensive system of Plan implementation for the New River and Lower Agua Fria River must be a continuing one in which decisions are made, then evaluated in the light of experience, and the new knowledge applied to subsequent decisions.

Just as the New River and Lower Agua Fria River Corridor is a focus on the forces of nature, it is also a focus of human cultures reaching back into pre-history. Our present culture is a part of this continuum that is recognized and understood if we are to have a sense of our place in the progression of civilization. Our present body of knowledge is surprisingly scanty, even of the relatively recent origins of the Phoenix area. The exploration, study and interpretation of history and pre-history thus become another continuing process.

The Plan also addresses adjacent land uses, most of which involve the introduction of residential areas within existing neighborhoods along the Corridor. In developing this Plan, we cannot presume to dictate the complex social and economic forces that affect where and how people choose to live. The Plan can and should provide the environment to support maximum opportunities and the greatest possible freedom of choice. The success of a Plan program will depend upon continuing attention by the local governments and agencies to policies of financing and land-use controls, and by concerned citizens and the public at large.

The matter of citizen participation is one that is formalized by local city governments and affected land management agencies. Public involvement is a complex, difficult and sensitive process that requires a meaningful approach and continued refinement as the Plan moves forward. There is significant value in the simple act of involving citizens, by whatever means, in the planning and development of public works.

Finally, the physical Plan is the scholarly and technological system, the free play of social, cultural and economic forces all interrelating to develop the single concept of the trail system. The Corridor Plan that develops this concept does so in the form of graphic interpretation and precise statements. However, the Plan should not be viewed as a precise recipe, yet more accurately as a thoughtful and responsible action by citizens and government working in concert to accomplish a vision for the New River and Lower Agua Fria River Corridor.

THE SONORAN DESERT LANDSCAPE

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Acknowledgements

WEST VALLEY RIVERS
NEW RIVER & LOWER AGUA FRIA

Mayor Skip Rimsza, Phoenix, Chairman
Mayor Ron Drake, Avondale
Mayor Dusty Hull, Buckeye
Mayor Edward C. Morgan, Carefree
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Mayor Larry Roberts, Wickenburg
Mayor Eugene Russell, Youngstown
F. Rockne Arnett, ADOT
Mayor Dallas Gant, ADOT
Willian Beyer, Citizens Transportation Oversight Committee

Acknowledgements

This plan was prepared under the direction of the Maricopa Association of Governments (MAG), with the assistance of the Flood Control District of Maricopa County and the Project's Agency Oversight Team. The work for this plan was integrated with the Agua Fria River Watercourse Master Plan funded by the Flood Control District of Maricopa County. We wish to thank the Flood Control District for their dedication to regional partnership and support of this project.

Mr. John F. Long was visionary in spearheading the planning of the West Valley Recreation Corridor. He served as a citizen liaison, generated interest among jurisdictions in the Corridor area, and solicited funding sources for the implementation of this project. His efforts are greatly appreciated.

We would like to thank the Arizona Department of Transportation (ADOT) Transportation Enhancement Fund Program (TEA-21) for providing funding for this visionary project.

Agency Oversight Team

The Agency Oversight Team is an ad hoc group with staff from Avondale, Glendale, Peoria, Phoenix and Maricopa County, as well as the Arizona Department of Transportation and the Flood Control District. The Team met monthly to discuss various aspects of two important projects: the MAG West Valley Multi-Modal Transportation Corridor Plan and the Flood Control District Agua Fria Watercourse Master Plan. The Agency Oversight Team provided vital input into the planning efforts for both projects, and members served as primary agency contacts for the duration of the study. Members include:

- Tom Ford, Arizona Department of Transportation
- Anthony Farier, Avondale, prior member
- Tony Widowski, Avondale
- Shirley Long, Flood Control Advisory Board
- Doug Williams, Flood Control District of Maricopa County
- Meaghan Ellsworth, Glendale, prior member
- Shirley Medler, Glendale
- Ron Smith, Glendale, prior member
- Dawn M. Coomer, MAG
- Reed Kempton, Maricopa County Department of Transportation
- Phil Bloom, Peoria
- Scott Friend, Peoria, prior member
- Kirk Haines, Peoria
- T.J. Newman, Phoenix, prior member
- Elayne Taylor-Tyler, Phoenix

MAG Staff
Executive Director: James M. Bourey
Project Manager: Dawn M. Coomer, Transportation Planner

We would like to thank several others who provided input at various stages of this project at public meetings, design charettes and Agency Oversight Team meetings. Their contribution has improved this project and will help ensure successful implementation of the New River and Lower Agua Fria Corridor.

Thank you to Steve Anderson, Pima County Trails; Scott Hamilton, City of Scottsdale; Dave Konopka, Maricopa County; and Jeff Hrycko, State of Arizona for lending their books, references and knowledge to the compilation of this report.

Thank you to the following public art programs for lending photos of public art: Cambridge, Massachusetts; King County, Washington; Chicago, Illinois; Phoenix, Arizona; Tempe, Arizona; Scottsdale, Arizona; Tucson, Arizona; Brea, California; Raleigh, North Carolina; and Santa Fe, New Mexico.

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Executive Summary

PROJECT DESCRIPTION

The West Valley Multi-Modal Transportation Corridor Master Plan is part of a multiphase undertaking conducted through the efforts of the Maricopa Association of Governments (MAG), in cooperation with the Flood Control District of Maricopa County (FCDMC). The corridor for the study is located along the New River and Lower Agua Fria River (see **Map 2, Project Study Area**) and will serve not only a recreational and alternative transportation purpose but also as a creative non-structural flood control system. The study began in December 1999 and designed and completed an overall trail plan involving several communities within the project area, including Avondale, Glendale, Peoria, Phoenix and Maricopa County. Funding for the project is being provided through the Arizona Department of Transportation (ADOT) and the Transportation Equity Act 21st Century (TEA-21) Transportation Enhancement Program. The West Valley Multi-Modal Transportation Corridor Master Plan is the first project to utilize ADOT TEA-21 enhancement funds to conduct a non-motorized transportation planning study. With the completion of the study, each community is encouraged to continue the process by finalizing design and building each segment of the trail, as funding becomes available.

PURPOSE & NEED

The primary purpose of the West Valley Multi-Modal Transportation Corridor Master Plan is to create a regional planning framework for a 42-mile trail network for pedestrians, equestrians, bicyclists, and other non-motorized trail users. The trail will be universally accessible to a variety of users of different abilities and ages. This network expands on the existing and planned river trail system to connect with existing trail linkages and all major public lands. These non-motorized, multi-modal transportation trails take advantage, where possible, of locations that offer the community multiple benefits such as alternative transportation routes, recreational opportunities, wildlife habitat preservations, open space protection and flood control.

PROJECT GOALS

Goal #1 Provide a shared-use, non-motorized trail to accommodate a wide range of user groups within the Corridor.

Goal #2 Provide a continuous, comfortable, efficient, uninterrupted trail system for non-motorized modes of transportation, and link destinations to the people who utilize them.

Goal #3 Enhance access and mobility for all non-motorized, multi-modal transportation users.

Goal #4 Exhibit a unique identity and celebrate the West Valley Rivers Corridor, individual communities along the Corridor, and the natural resources and landscape character within the Corridor.

Goal #5 Protect natural and cultural resources within the Corridor from the adverse effects of rapid urban development in the West Valley.

PRIMARY STUDY CONCEPTS

- Establishes a regional planning framework for a 42-mile trail network for pedestrians, equestrians, bicyclists and other non-motorized trail users.
- Creates a universally accessible trail for a variety of users of different abilities and ages.
- Expands on the existing and planned river trail system to connect with existing trail linkages and all major public lands.
- Establishes a mechanism for the conservation of natural river resources.
- Manages future development by conserving open linear spaces and preserving wildlife habitats along the river corridor.
- Encourages an awareness for livable community design.
- Identifies a variety of funding mechanisms to implement the project for communities along the river corridor.
- Ensures consistent and uniform design for the development of a safe multi-modal trail.
- Creates consensus among communities and encourages regionalism.

Jurisdictional Coordination —

The trails in the proposed system pass through several jurisdictions, including Maricopa County, the Flood Control District of Maricopa County (FCDMC), the Cities of Phoenix, Peoria, Glendale and Avondale, the Bureau of Land Management (BLM) and Arizona State Lands. Because the trail's network will connect to state and federal lands, involvement of all governmental jurisdictions is critical to implement the West Valley Multi-Modal Transportation Corridor Pan. A trail system as extensive as that proposed may take as long as 20 to 30 years to implement. In order to assure that the involved jurisdictions retain their resolve to implement the Plan, the continuation of consensus created in this planning effort is imperative. All municipalities in the West Valley must therefore maintain their strong partnership throughout the trail system's development.

Plan Elements —

Trail Segments:

- 16 total segments in the New River and Lower Agua Fria River Corridor
- 5 trail types
- 10 trail element types
- 3 landscape management zones

Shared Use/Non-Motorized Users:

- Pedestrian/hiker
- Bicyclists
- Equestrians
- Rollers (rollerbladers, rollerskaters, skateboarders)
- Persons of all ages and abilities

Trail design guidelines were created using the recommended guidelines of the following:

- American Association of State Highway and Transportation Officials (AASHTO)
- Manual on Uniform Traffic Control Devices (MUTCD)
- Americans with Disabilities Act (ADA)

TRAIL SEGMENTS

To more effectively plan, implement, and manage areas for design and development, the 42-mile New River and Lower Agua Fria River was divided into 16 trail segments. These segments were determined by:

1) **Reaches:**
   1. Northern reach- from the community of New River south to the New River Dam
   2. Central reach- from the New River Dam south to the confluence with the Agua Fria River
   3. Southern reach- from the Lower Agua Fria River/ confluence with the New River south to the Gila River
2) **Jurisdictions**: Maricopa County, Peoria, Phoenix, Glendale, Avondale
3) **Approximate length** of 2.5 to 3 miles. This length is considered a minimum desired distance for incurred costs, budget limitations and trail management from a trail design and development standpoint.
4) **Geographical and other features** that serve as logical boundaries, such as the New River's confluence with the Agua Fria River.

TRAIL SEGMENT COSTS

Estimated costs for development of the New River and Lower Agua Fria River Corridor trail system range by trail segment from $1.6 million (segment N-2, Anthem Way to Desert Hills Drive) to $11.7 million (segment N-4, Carefree Highway/SR 74 to the Central Arizona Project). These costs, based on an optimal system, vary due to trail surface (paved versus unpaved), trail length (amount of paving) and the number of amenities (bridges, gateways, etc.) located within each segment. The average cost for developing each trail segment is estimated at $5.4 million. These costs were developed based on year 2001 figures.

POLICY RECOMMENDATIONS

Nine Steps to Implement the West Valley Rivers Trail Project

Step #1 Local Governments Support the Trails Initiate by Formal Adopted Resolution.

Each governing jurisdiction located within the West Valley Rivers region can formally acknowledge their support to partner with other communities and governing agencies to assure the implementation of the New River and Lower Agua Fria River Multi-Modal Transportation Corridor trail system by developing formal resolutions to acknowledge full support for the implementation.

Step #2 Local jurisdictions should Work Collaboratively with Clearly Defined Intergovernmental Agreements.

Local government support is essential in the development and implementation of the West Valley River Project. If the West Valley trails project is to become a reality, full coordination and cooperation will be paramount in the initial stages and continuing phases of the West Valley River Project. Each local jurisdiction within the West Valley River Corridor-Avondale, Glendale, Goodyear, Peoria, Phoenix, and Maricopa County, the Flood Control District, Arizona Department of Transportation and state land managers should enter into intergovernmental agreements (IGAs). IGAs will outline key roles and responsibilities, clarify trail access policy, funding expectations, project phasing, and management roles.

Step #3 Leverage Funding from a Variety of Sources through Capital Improvement Program (CIP) and Bond Funding Programs with Flood Control District and Private Development Participation.

Each local jurisdiction should include the West Valley Multi-Modal Transportation Corridor trail land acquisition, design and construction phasing funding for priority trail segments in their local annual Capital Improvement Programs (CIP). Funding sources may include revenue and general obligation bonds, State Highway User Revenue Funds (HURF), and Federal Transportation Enhancement Activity funds (TEA-21). The trails program should be coordinated and clearly defined in each jurisdiction's annual budget programs for both parks and recreation and transportation department CIPs.

Step#4 Initiate Appropriate Policy Changes to Allow Public Access on Urban Flood Control and Other State Owned Lands.

The Flood Control District of Maricopa County, the Bureau of Land Management, the State of Arizona, and local jurisdictions should strive to change current policy limiting public access to existing linear corridors such as flood ways, drainage and utility easements, or to the public lands to allow for legal trail access for the general public.

Step #5 Establish a West Valley River Trails 'champion' by Supporting Public Efforts as Partnerships.

Any number of trails special interest groups can be empowered with the help of local jurisdictions to provide a key role in developing and implementing the West Valley Rivers Trails Project. Public efforts designed to recognize and encourage the roles of the public are absolutely necessary to garner support for the development of these complex urban river trails projects.

Step #6 Ensure Consistency in Trail System Design Throughout the Entire Corridor.

In order to minimize liability to jurisdictions, the West Valley Rivers trail system design must conform to the established design guidelines established by AASHTO (American Association of State Highway Transportation Officials), the MUTCD (Manual of Uniform Traffic Control Devices) standards for signage, and Arizona Department of Transportation (ADOT) guidelines for bicycle and pedestrian facilities.

Step#7 Fulfill the Vision of the Master Plan by Following the Implementation Strategies Action Plan.

While the Master Plan sets the stage for implementation, the Implementation Strategies Action Plan (Action Plan) describes how to complete the Master Plan. The Action Plan supports the Master Plan by defining specific methods and strategies to identify phasing and implementation strategies, funding alternatives and key roles and responsibilities for this long-term, multi-jurisdictional trail project.

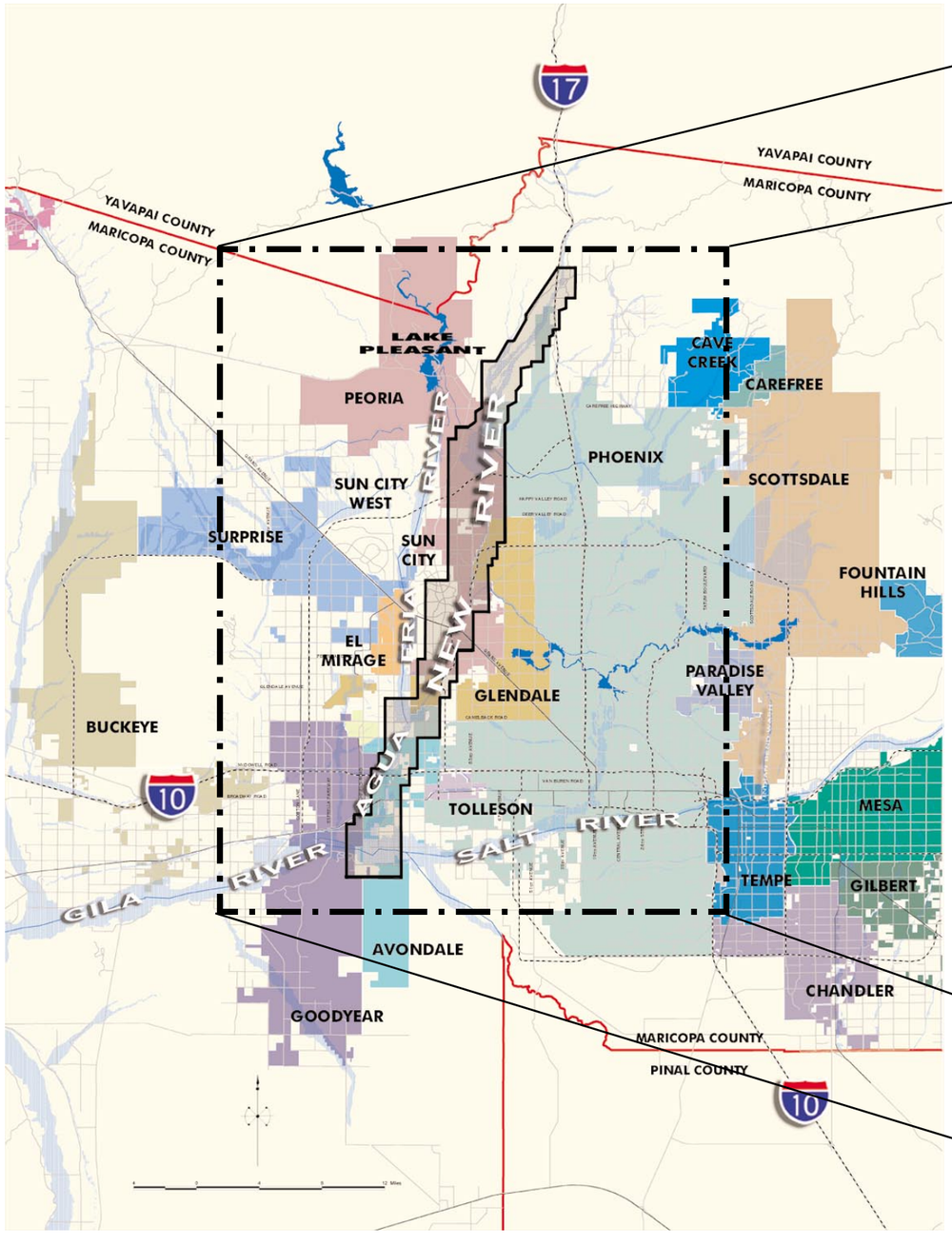
Step #8 Create an Ongoing Operational and Maintenance Program throughout the West Valley River Corridor.

Ongoing operational and maintenance programs, established by each responsible jurisdiction along the West Valley River trails system, will ensure the safety of trail users, minimize the liability for local governments, and enhance the quality and livability of the communities along the trail system.

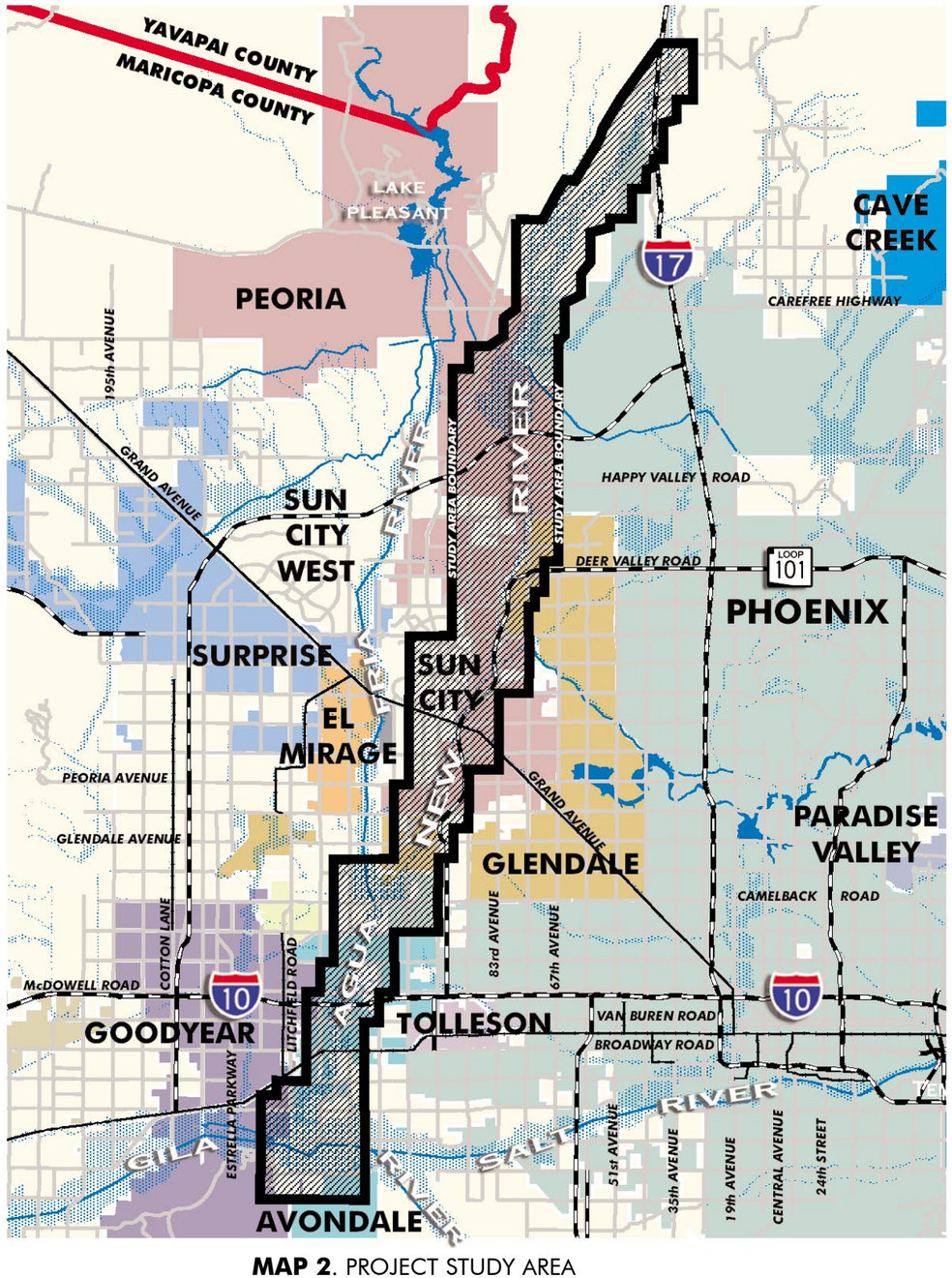
Step #9 Conduct Evaluations of Key Programs, Completed Trail Segments and Ongoing Processes for each Phase of Trail Development.

Each component of the West Valley River Trials project should be evaluated on an ongoing process by a Trails Advisory Committee in conjunction with the regional trails planner and local jurisdictional support staff from each affected community in the West Valley.

Introduction



MAP 1. PROJECT VICINITY



MAP 2. PROJECT STUDY AREA

PLAN PURPOSE & PROCESS

The New River and Lower Agua Fria River Corridor represents a riparian ecosystem common to the Sonoran Desert region of Arizona. This unique Corridor contains valuable geographic features, a rich diversity of plant and animal habitats, cultural and historic resources, and beautiful vistas. The Corridor also links many communities together in the West Valley.

John F. Long, a well-known local supporter of parks and recreation, had a vision that the New River and Lower Agua Fria River could be a major recreation and open space amenity for the West Valley. Mr. Long called a meeting of local governments in August, 1998. He was instrumental in catalyzing a study group to explore the potential to create a proposed natural open space and recreational amenity along the New River and Lower Agua Fria River.

This West Valley Multi-Modal Transportation Corridor Master Plan is part of a multiphase undertaking conducted through the efforts of the Maricopa Association of Governments (MAG), in cooperation with the Flood Control District of Maricopa County (FCDMC). This study sets a precedent for an overall plan to be designed involving several communities, who will then have the responsibility for building their section of the Corridor. Funding for the current Corridor study is provided through the Arizona Department of Transportation's (ADOT) Transportation Enhancement (TE) Program. This project represents the first time ADOT TE funds have been used to conduct a non-motorized transportation planning study. Following the completion of this study, each community is encouraged to continue the process to design and build each segment of the trail as funding becomes available.

The principal purpose of the Plan is to create a regional planning framework for a 42-mile trail network for pedestrians, equestrians, bicyclists, and other non-motorized trail users. The trail will be universally accessible to a variety of users of different abilities and ages. This network is to expand on the existing and planned river trail system to connect with existing trail linkages and all major public lands. These planned non-motorized, multi-modal transportation trails take advantage, where possible, of locations that offer the community multiple benefits such as alternative transportation routes, recreational opportunities, wildlife habitat preservations, open space protection and flood control.

Public involvement and outreach were key components in the development of the Plan. An Agency Oversight Team composed of representatives from county and local governmental agencies, provided guidance, advice and information during the preparation of the Plan and actively reviewed and commented upon its products. In order to involve other interest groups and members of the general public, press releases, newsletters and door hangers were distributed. Four open houses and a one and one-half day design workshop were held to provide one-on-one communication opportunities and to present data and an overview of the Plan. Through this process, the subsequent vision, goals, objectives, and trail alignment were identified for the Corridor. This is the basis of the West Valley Multi-Modal Transportation Corridor Plan.

AERIAL VIEW OF THE JACKA SUN-UP RANCH PROPERTY IN NEW RIVER WITH GAVILAN PEAK IN THE BACKGROUND

HISTORIC PHOTOGRAPHS, NEW RIVER AREA

VISION STATEMENT

The New River and Lower Agua Fria River Corridor represents a unique riparian ecosystem that is reflective of the Sonoran Desert Region of southern Arizona and Sonora, Mexico. This desert riparian system is a valuable geographic feature known for its native plants and animal habitats, cultural and historic resources, and visual qualities. Through the efforts of many individuals and West Valley communities, the future Corridor will include a 42-mile shared-use non-motorized system of trails along the New River & Lower Agua Fria River. The trail system will link the community of New River and the cities of Avondale, Glendale, Peoria and Phoenix, following the New River southwest to the confluence of the Agua Fria River and the Gila River. When completed, the Corridor will be symbolic of humankind's respect for the Corridor by conserving its natural resources and integrating an efficient system of shared-use trails for all users.

The Vision for the New River and Lower Agua Fria River Corridor shared-use trail will:

- Incorporate a regional system of trails designed to enhance the quality of life for all residents in the West Valley.
- Provide a continuous interconnected system of trails for the purpose of encouraging alternative modes of transportation and recreational opportunities.
- Respond to the natural river system, the flood control functions of the River, and the needs of the community.
- Establish a precedent to conserve the natural renewable resources along the West Valley Rivers Corridor.
- Provide educational and interpretive opportunities for the public on sensitive cultural resources, and plant and wildlife habitats that are unique to Sonoran Desert riparian areas.
- Conserve the valuable riparian resources from adverse effects caused by rapid urban development in the West Valley.
- Enhance the visual appeal of the West Valley Rivers Corridor through a unified design that complements its natural elements.

RIVER CORRIDOR TRAIL SYSTEM LINED WITH MESQUITE TREES

PROJECT GOALS & OBJECTIVES

The overall goal of the West Valley Multi-Modal Transportation Corridor Plan is to establish a continuous river trail system along the 42-mile New River and Lower Agua Fria River as natural river systems, trails, and adjacent parks have long been recognized for their environmental protection, recreation values and aesthetic qualities. In our communities, river corridor trail systems can also enhance property values, increase tax revenues, mitigate impacts on the natural environment, reduce area motor vehicle traffic and promote a local identity.

Regional planning and development of open space corridors can influence the design of the landscape and its integration with the community's development. The West Valley has a wealth of open space and historic features connected with the New River and Lower Agua Fria River. In order to address the nature of the Corridor and existing jurisdictional policies, a series of goals and objectives were first formulated to plan the development for the Corridor. A ***goal*** can be defined as concise statement describing a condition to be achieved, and does not describe specific action but a desired outcome. An ***objective*** is an achievable step towards a goal, where progress can be measured. Each goal and its accompanying objectives identified for this project are listed below.

Goal #1 The New River and Lower Agua Fria River Corridor shall provide a shared-use, non-motorized urban trail to accommodate a wide range of user groups within the Corridor.

Objectives:

- *The Corridor design shall provide opportunities for all users by adhering to current trail design standards.*
- *The planning and design process of the Corridor shall seek input from a range of user groups to insure that the trail accommodates non-motorized transportation users and as many recreational users as possible.*
- *The Corridor design process shall draw upon existing policies and goals previously established by communities along the Corridor to insure that the project is consistent with each community's goals and objectives.*

Goal #2 The New River and Lower Agua Fria River Corridor shall provide a continuous, comfortable, efficient, uninterrupted trail system for non-motorized modes of transportation, and link destinations to the people who utilize them.

Objectives:

- *The Corridor planning and design shall identify major origin and destinations within the Corridor area and determine appropriate alternative alignments to insure that linkages are provided.*
- *The Corridor planning and design will respond to existing and future transportation linkages, including connections to existing and future park-and-ride facilities, public transit service, local neighborhood pedestrian trails, and other multi-modal circulation systems.*
- *The Corridor project will identify a protected easement for the purpose of establishing public trail access, conserving open space and visual qualities, and protecting environmental and cultural resources along the Corridor.*

Goal #3 The New River and Lower Agua Fria River trail system shall enhance access and mobility for all non-motorized, multi-modal transportation users.

Objectives:

- *The shared-use path design shall be established by developing a hierarchy of trail design types to respond to multiple uses, landscape character zones and community needs.*
- *The continuous trail system shall provide a primary and secondary shared-use trail. The primary system shall respond to the urban character zones and include a minimum 10-foot wide hard surface facility; the secondary trails shall respond to the rural character zones and may be hard packed decomposed granite or other suitable materials.*
- *The Corridor trail system shall, wherever feasible, include grade-separated intersections at major roadway crossings or other physical barriers along the Corridor.*
- *The Corridor trail design shall incorporate safe design principles outlined in federal design standards, current American Association of State Highway and Transportation Officials (AASHTO) Design Guidelines for Bicycle Facilities, and current recognized design standards for equestrian needs.*
- *The Corridor shall be designed to accommodate all users by incorporating the recognized Americans with Disabilities Act (ADA) design standards.*

Goal #4 The New River and Lower Agua Fria River Corridor shall exhibit a unique identity and celebrate the West Valley Rivers Corridor, individual communities along the Corridor, and the natural resources and landscape character within the Corridor.

Objectives:

- *The Corridor project shall include a public outreach campaign that explores a range of creative measures to solicit input from each community along the Corridor.*
- *The Corridor shall have a trail system graphic logo and trail signage element that responds to the individual communities, Maricopa Association of Governments (MAG), the Flood Control District of Maricopa County (FCDMC), and the natural and cultural features along the Corridor.*
- *The Corridor design shall demonstrate a respect for the natural riparian elements of the River Corridor by incorporating water conservation measures, protecting and enhancing habitat, and establishing an environmental education and interpretive element.*
- *The Corridor shall integrate non-structural flood control measures to protect the existing landscape character.*

Goal #5 The New River and Lower Agua Fria River Corridor shall protect natural and cultural resources within the Corridor from the adverse effects of rapid urban development in the West Valley.

Objectives:

- *Individual communities and agencies along the Corridor are encouraged to adopt development review standards and design guidelines as tools to preserve urban trail corridor access and right-of-way easements required for the construction of a continuous trail along the Corridor.*
- *Ensure effective, ongoing dialogue between the various communities along the Corridor to move toward implementation of the New River and Agua Fria River Corridor project.*
- *Standards on setbacks, pedestrian access, site development orientation, and appropriate land uses for the New River and Agua Fria River Corridor shall be recommended to each jurisdiction along the Corridor.*

Analysis and Trail Classification

Brief Introduction

This section of the West Valley Multi-Modal Transportation Corridor Plan (Plan) considers the overall physical character of the New River and Lower Agua Fria River Corridor's (Corridor) study area and various factors of its landscape. These concepts are needed to help guide the planning and development process of the trail system while minimizing the degradation of the natural environment and sensitive desert landscape.

The Corridor Character is represented by a variety of major physical elements that cross several communities within its boundaries. The general topography of the Corridor includes low undulating hillsides, mountains to the north, wide-open spaces, wide major washes and innumerable deep arroyos that cause a rolling terrain. The northern reach has a rugged terrain and has remained largely undeveloped, while the flat topography of the central and southern reaches has favored urban development.

The Corridor is divided into three landscape management zones–conservation, passive and active–to assist in the successful planning and design of the natural landscape. Consideration of intensity of use will help with the trail system's integration into the environment. For example, sensitive areas, such as those prone to erosion, will need to have restricted access for necessary mitigation efforts.

Land ownership adjacent to the primary trail is also discussed in this section. Identifying land parcels that are privately owned or held by various local, state or federal agencies, can assist in future land acquisition efforts to obtain an easement for trail development.

Potential user conflict areas are identified throughout the 42-mile Corridor. These areas, such as bridge structures, sand and gravel pit operations and creek/river confluences, present challenges to trail design and development. Questions of safety for trail users are also necessary to address. Careful thought to the alignment of the trail system was therefore required to mitigate any potential harmful affects, to both humans and the environment.

Five trail types are identified within this section. These trail types include primary, secondary, neighborhood/transit/connector, conservation/interpretive, and equestrian trails. Each trail varies in location, intensity, and design to accommodate a variety of anticipated trail users and amenities offered.

Lastly, Corridor prototype designs concepts have been determined to respond to a variety of trail needs. Creating an identity and sense of place, maximizing safety, and establishing a regional multi-modal transportation system that links to residential areas, bus routes, parks, commercial and office and other facilities, are just a few of these needs.

Corridor Character

The New River and Lower Agua Fria River Corridor falls within various jurisdictions of state and federal agencies, Maricopa County, and the cities of Peoria, Glendale, Phoenix and Avondale. Jurisdictional differences in the study area, combined with unique local histories, geographic features, and differing overall development strategies create a complex study area character.

Due to the 42-mile length of the Corridor, the study area has been divided into three conceptual planning River "reaches," each one relatively unique in character (see **Map 4, Corridor Character**). The northern reach encompasses the area from the unincorporated community of New River, southwest to approximately one-mile north of the New River Dam. The central reach begins at the southern boundary of the northern reach, continues southwest and ends one-quarter mile north of Glendale Avenue. The southern reach includes the final third of the study area, from the southern central reach boundary, and terminates at the confluence of the Lower Agua Fria River with the Gila River. These reaches, referred to throughout the text of this Plan, are described in greater detail below.

The Northern Reach

The northern reach encompasses the area from the unincorporated community of New River south to the New River Dam. This Reach is made up mostly of conservation/sensitive Land area. The source of the New River lies in the mountain ranges to the north of the of New River, where the course of the riverbed is largely unrestricted in this vicinity. The isolated location of this area, limited access, and Bureau of Land Management (BLM), State Land and Maricopa County ownership has slowed development. As a result, the land use character can be described as largely rural with open space.

Large areas of range with open grazing present the greatest opportunities for a non-motorized shared-use trail. Positive factors that will enhance the project are trail linkages with the City of Phoenix future Sonoran Preserve and the largely unspoiled natural environment of the area. Few formal trails are found in the area, although many equestrians, hikers and bicyclists use the area for recreation. A concern within the area is the use of motorized recreational vehicles and their potentially destructive impacts to the natural environment.

Other key character elements of the northern reach include:

- Environmentally Sensitive Development Areas (ESDA)/retention areas (high open space value, recommended for sensitive development regulations in the MAG Desert Spaces Plan).
- The New River Dam is a major physical constraint in this area.
- Least developed of the three reaches.
- Limited number of current roadways cross trail alignment; either at-grade or grade-separated trail crossing trail crossings should be feasible.
- Few formal trails found in the area.
- Numerous "wildcat" ATV trails, dumping and shooting areas found in area.
- Topography in area of New River Dam presents challenges to trail construction, access for people with disabilities.
- Trail facilities and amenities, such as restrooms and benches, are non-existant.
- Approximate River mile length is 16.61.

The Central Reach

The central reach area includes the region from the New River Dam south to the confluence of the New River with the Agua Fria River. Land area here is mostly a mix of suburban and urban privately owned land. From the confluence with Skunk Creek, the New River's course is largely channelized until it terminates at the Agua Fria River south of Glendale Municipal Airport. The cities of Peoria, Phoenix, Glendale, and the unincorporated areas of Sun City and Maricopa County are within the central reach.

Cities located in the central reach are currently developing or have completed their own trails plans. The trails plans are local initiatives that do not necessarily link across jurisdictional boundaries. These plans connect transit routes and bikeway systems that in turn connect neighborhoods, schools, parks, employment centers and regional open space systems. Many trails are found adjacent to the New River in this reach, but do not cross or parallel it in a north-south direction. The trail connetions include the Sun Circle, the Central Arizona Project (CAP), the Grand Canal, and the Arizona Canal Multi-Use Trail. Trail fragmentation and heavy traffic on roads in the central reach is a constraint that will be addressed in the future, as this Plan is implemented.

Other key character elements of the central reach include:

- Most developed of the three reaches.
- High population density should result in high trail utilization.
- Pockets of land between Corridor and Loop 101 Freeway.
- Highly-channelized (steep slopes, hard concrete edges, guardrails along top of banks that limit access between top-of-bank and riverbed).
- Potential safety hazards (rip-rap, exposed utilities, side drainages, lack of safety rails and handrails, etc.).
- Some concerns with trail proximity to private property.
- Numerous roadways cross trail alignment; grade-separated crossings may be preferred, at-grade crossings should receive enhanced safety treatments.
- Some "wildcat" trail use by ATVs.
- Flood Control District of Maricopa County (FCDMC) control and management along Corridor.
- Approximate River mile length is 15.14.

The Southern Reach

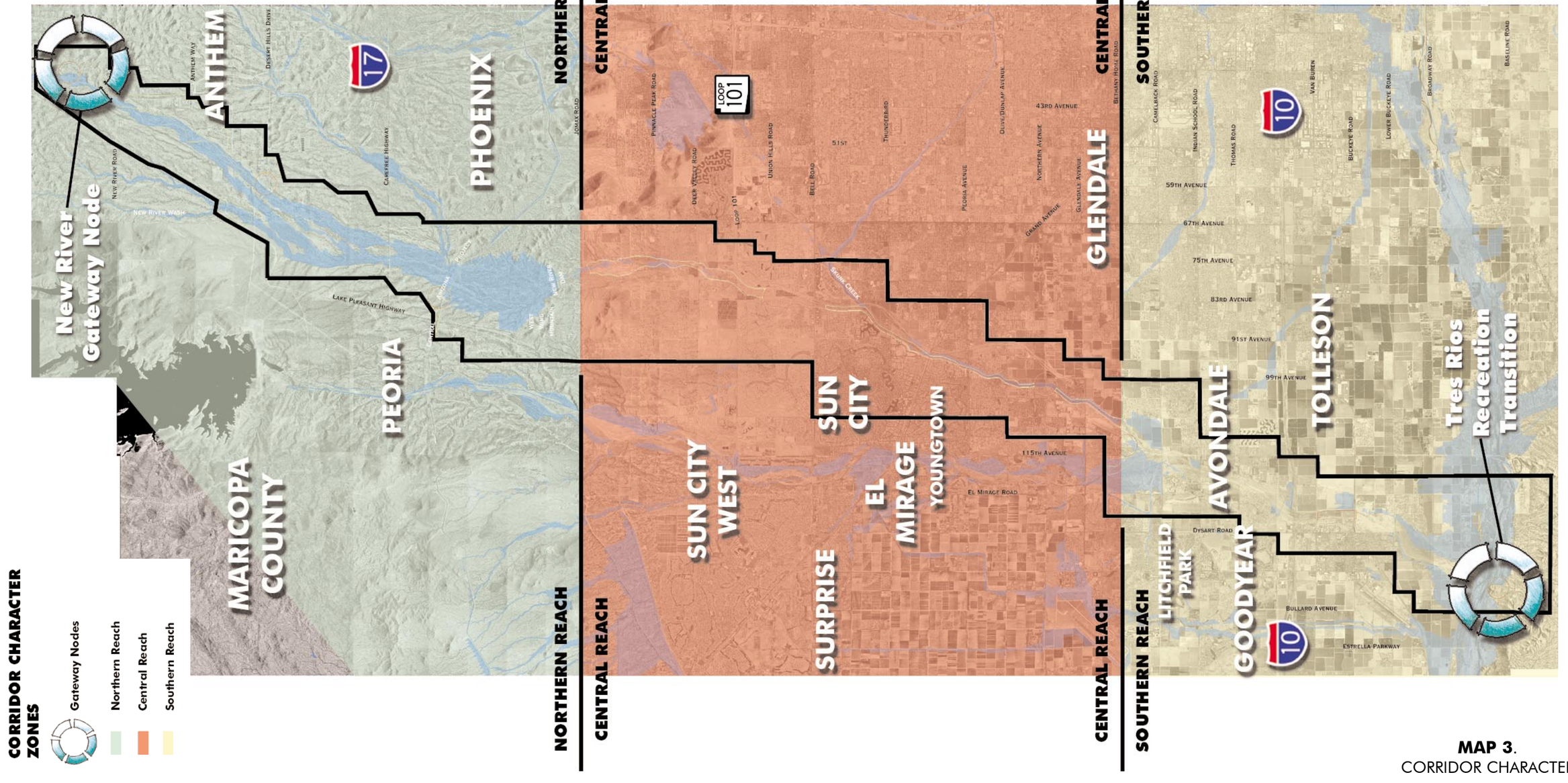
The southern reach includes the cities of Phoenix, Avondale and portions of unincorporated Maricopa County. The predominant land use is agriculture/ranch. Residential, commercial, industrial, and public zoned land is found in pockets along the Lower Agua Fria. As a result, area land use can be characterized as a mixture of suburban and agricultural. There are fewer roads in the southern reach that impact user access to the trail. Open space, the mixed rural-suburban nature of this Reach and the wide floodplain near the confluence with the Gila River are positive factors that should facilitate the planning of the Southern Reach of the New River and Lower Agua Fria Corridor. Greater opportunities for parks and other recreational amenities as well as trails with less restricted use are possible here.

Open space and the mixed rural-suburban nature of the study area has allowed less restrictive trail use in the southern reach of the New River and Lower Agua Fria River Corridor. Numerous horse properties have facilitated the development of equestrian trails in the New River and Lower Agua Fria River. Existing and planned paved and unpaved trails are found on both sides of the Lower Agua Fria River, which tie into multi-use trails along Buckeye Road and the Roosevelt Irrigation District (RID) Canal, the Gila-Salt River trail, and Avondale bike lanes.

Other key character elements of the southern reach include:

- Fewer roadways to impact the free flow of trail users.
- Levees regulate flow in this area.
- Less restrictive trail use due to open space and mixed land use.
- Existing and planned trails, both paved and unpaved, on both sides of Corridor.
- Approximate River mile length is 11.04.

Analysis and Trail Classification



MAP 3.
CORRIDOR CHARACTER

Landscape Management Zones

Landscape management zones are a guide for development of uses, while protecting valued landscape character areas. In order to protect the natural landscape, serve the needs of adjacent communities, and provide for a continuous multi-use trail system, five landscape character zones were initially suggested. These zones range from restrictive preservation to passive and more active urban use. Zones were determined based on existing land use, intensity of development and the nature of the area landscape. In addition, two zones (preservation and conservation) are based on definitions obtained from the MAG Desert Spaces Plan.

Landscape management zones can help protect the landscape character and sensitively integrate various levels of use intensity. Low levels of use, including conservation and passive zones, can help protect natural and sensitive landscapes in the northern reach of the Corridor. Higher levels of use, including passive and active zones, can help retrofit and rehabilitate appropriate landscapes and develop new landscapes.

Landscape management zones were refined to reflect the rural, suburban and urban characteristics discussed in the Agua Fria and West Valley Recreation Master Plan. Thus, the initial five zones were refined into three zones. Conservation areas represent rural, natural landscape character areas of the Corridor. Passive areas represent suburban, residential landscape character areas of the Corridor. Active areas represent urban, mixed land use development landscape character areas of the Corridor.

This range of character zones recognizes existing conditions and creates a regional planning framework for New River and Lower Agua Fria River Corridor development. These zones are based on organization of sensitive landscape areas, and range from low traffic and use impact to areas that may accommodate increased traffic and use impact. **Map 4, Landscape Management Zones**, shows the locations of each of these three zones. A discussion of the three Landscape Management Zones used in the planning of the New River and Lower Agua Fria trail system follows.

Conservation Zone

The intent of this zone is to protect the natural landscape character of the Sonoran Desert. Trail access is controlled in order to protect sensitive desert environments. Trails are limited to well-defined areas, thus restricting users and minimizing impact on sensitive vegetation, wildlife, riparian and natural areas. Trail users include pedestrians, bicyclists, and equestrians. This zone would provide key opportunities for environmental education and environmental interpretation. Ideal areas for conservation demarcation are located in undeveloped areas, such as in the northern reach and areas around the New River Dam and its surrounding natural riparian areas.

Development Activities in the Conservation Zone

- Transportation: Access restricted to protect sensitive desert areas, trails will skirt areas.
- Flood Control: Natural, non-structural solutions, low-flow channels integrated into the environment.
- Recreation: Pedestrians, bicyclists, and equestrians on trails routed around fragile sensitive environmental areas.
- Interpretation/Education: Controlled access, viewing platforms and elevated pathways for observation of protected habitat, especially in areas near New River Dam.
- Extraction: None.
- Funding: Minimal funding is needed, due to restricted access in these areas; public (local, state, federal) and private (corporate sponsors, developers, etc.), for public facilities and the cost of retrofitting bridges and underpasses.
- Trailhead: Outside the floodplain, trails provide buffer skirt around preservation / conservation areas and are limited to well-defined areas.
- Preferred Adjacent Land Uses: Residential (buffered from the floodplain), open space, resort; wider dedicated easement, offering more opportunities.
- Recharge: Natural (wetlands) only.
- Others/Special Areas: Protect riparian areas and natural areas, especially in Northern Reach.

Passive Zone

The intent of this zone is to provide for low and moderate intensity uses and protect the surrounding suburban residential character areas. Trail users would include pedestrian level 1 and 2 users (as defined in the MAG Pedestrian Area Policies and Design Guidelines), including pedestrians, bicyclists, and equestrian amenities. Trails could include natural decomposed granite, asphalt or concrete surface materials. This zone provides the opportunity to link with adjacent community open space systems, parks and schools. A multi-use trail system of paved trails, located outside the 100-year floodplain would be the focus of this zone. Users may include walkers, bicyclists, and in-line skaters. Areas identified for passive zones include lands in the vicinity of the community of New River, lands south of the New River Dam, lands along Deer Valley Road and Union Hills Drive, lands at the confluence of the New River and Lower Agua Fria Rivers and lands at the confluence of the Lower Agua Fria and Gila Rivers.

Development Activities in the Passive Zone

- Transportation: Link with community open space system and residential areas.
- Flood Control: Non-structural; structural to protect road crossings, existing development or to preserve natural features.
- Recreation: Pedestrians, bicyclists, and equestrians on trails routed around fragile sensitive environmental areas.
- Interpretation/Education: Numerous opportunities on proposed trails with informational signage on bridges and structures; linkages also serve as educational opportunities, including identification of historic sites.
- Extraction: None.
- Funding: Substantial funding will be needed; public (local, state, federal) and private (corporate sponsors, developers, etc.) for public facilities and the cost of retrofitting bridges and underpasses.
- Trailhead: Limited facility trailheads inside the floodplain, small picnic areas, restrooms and compact parking areas.
- Preferred Adjacent Land Uses: Residential outside the floodplain, neighborhood commercial, community (i.e. library, park, low intensity administrative or medical offices).
- Recharge: Revegetated areas, soft surface basins and/or channels integrated into surrounding environment.
- Others/Special Areas: Linkages to neighborhood school sites and parks.

Active Zone

The intent of this zone is to provide for higher intensity uses and protect the surrounding mixed land character areas. Trail users would include pedestrian level 3 (as defined in the MAG Pedestrian Area Policies and Design Guidelines) users, including walkers, strollers, and bicyclists. Where possible, separate routes for in-line skaters and equestrians should ideally by-pass pedestrian routes for safety and security. Areas identified for active zones include three sub categories: urban commercial mixed use areas, such as the node at Bell Road; village core areas, such as future nodes at Avondale and New River town center open space linkages; and recreational trailhead access, such as linkages at adjacent commercial land uses and adjacent recreational uses including Estrella Mountain Regional Park. The sub categories of this active zone are described below:

Active Zone: Urban Commercial Mixed Use Areas

A multi-use trail system of concrete or special paving, located outside of the 100-year flood channel is suitable for urban commercial mixed use areas. Urban Commercial Mixed Use Areas include residential, commercial, retail and office uses. Users include pedestrians (Level 3) and bicyclists. Equestrians and in-line skaters would be routed to by-pass the pedestrian route. This destination area should be a maximum length of ¼ mile to encourage walking. Areas identified for this type of high intensity include the community of New River, land at the confluence of Skunk Creek and the New River, and land at the confluence of the New River and the Lower Agua River.

Active Zone: Village Core Area

A multi-use trail system of concrete or special paving, located outside the 100-year flood channel is a second active zone sub-type that is appropriate for village core areas. Community open space, public and private land uses provide the opportunity to encourage the urban village concept, whereby each municipality would be encouraged to develop personalized destinations to link their community with the New River and Lower Agua Fria Corridor. Users include pedestrians (Level 3), and bicyclists. Equestrians and in-line skaters would be routed to by-pass the pedestrian route. This destination area should be a maximum length of ¼ mile to encourage walking. Areas of the New River and Lower Agua Fria Corridor identified for this type of high intensity include land around Avondale and land at the confluence of the Lower Agua Fria and the Gila Rivers.

Active Zone: Recreational Nodes, Trailhead Access

A multi-use trail system of concrete or special paving, located outside the 100-year flood channel is a third sub-type within the active zone that is suitable for recreational nodes and trailhead access. Parks and recreational uses may include the Estrella Mountain Regional Park, rural community open space and facilities such as a rural general store. Users include pedestrians (Level 3), hikers and bicyclists. Equestrians and in-line skaters would be routed to by-pass the pedestrian route. This destination area should be a maximum length of ¼ mile to encourage walking.

Development Activities in Active Zone

- Transportation: Links between residential, commercial, recreational, etc. areas; bypass routes to separate more intensive users from pedestrians.
- Flood Control: Structural to stabilize banks, protect planned and existing development and desired natural features.
- Recreation: Pedestrians, bicyclists, and equestrians on trails routed around fragile sensitive environmental areas.
- Interpretation/Education: Numerous opportunities on proposed trails with informational signage; linkages also serve as educational opportunities.
- Extraction: Revegetation and restoration plans required, time limits placed on activities, buffering during activities required.
- Funding: Substantial funding will be needed; public (local, State, Federal) and private (corporate sponsors, developers, etc.) for public facilities and the cost of retrofitting bridges and underpasses.
- Trailhead: Full facility trailheads, picnic areas restrooms, paved parking areas and play fields (where appropriate).
- Preferred Adjacent Land Uses: All uses in the Passive category plus mixed use, industrial and high intensity areas, including Village Cores and the New River Dam.
- Recharge: All the Passive category plus landscaped hard surface basins, pipes, hard surface and landscaped channels.
- Others/Special Areas: Development activities should link with special community district areas.

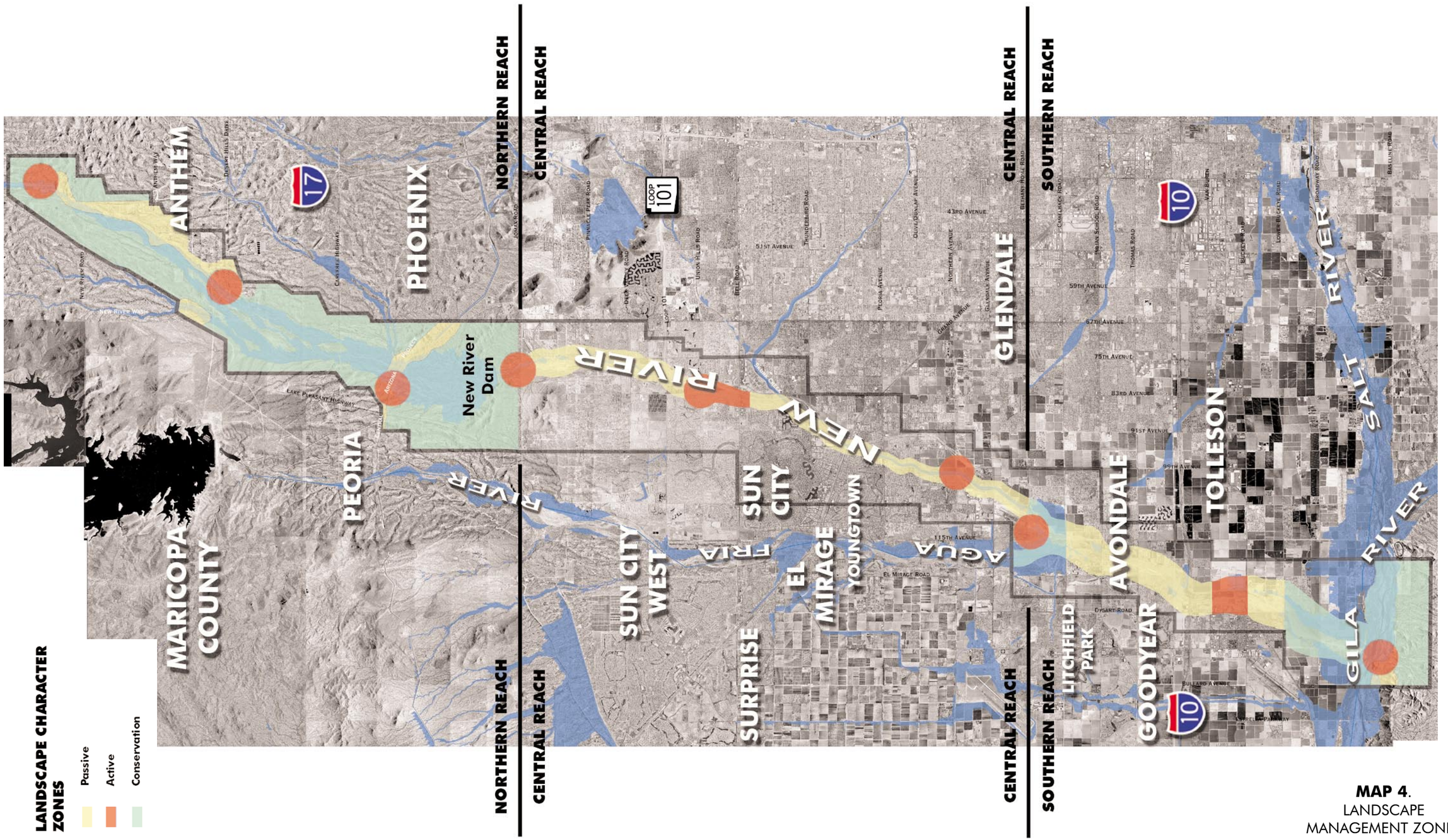
All Zones

Trail design guidelines for the New River and Lower Agua Fria project should be consistent to ensure uniformity and predictability for trail users, ensure the safety of trail users and accommodate as many user groups as possible throughout the 42-mile trail system. It is also important that this adopted standard minimize the liability of jurisdictions and agencies along the Corridor. Other design considerations, however, such as landscape, plazas and public art, offer greater flexibility and interpretation of design by individual cities. This plan provides minimal guidance to design a comprehensive trail system.

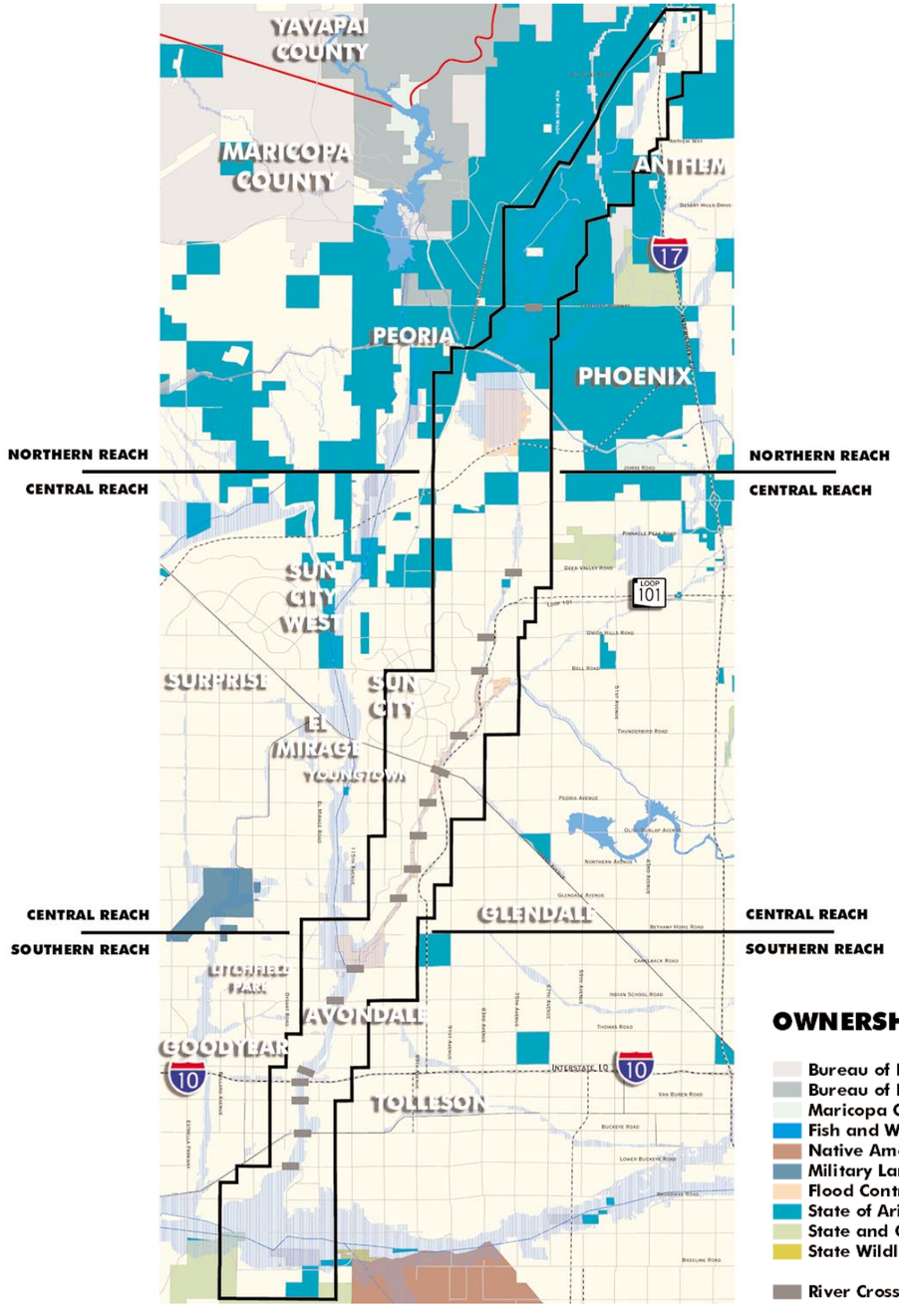
The public art section of this document provides information on public art and the public art process. Public art offers a way to unify the trail system as well as showcase its unique design. Public art is an element that can distinguish the New River & Lower Agua Fria Corridor as a destination in the West Valley.

Trail design guidelines for users of all ages and all abilities are included in this document are in accordance with the standards set forth in the Americans with Disabilities Act (ADA).

TRAIL USER IN A RESIDENTIAL AREA



MAP 4.
LANDSCAPE MANAGEMENT ZONES



MAP 5. LAND OWNERSHIP

RIPARIAN HABITAT DOWNSTREAM FROM CAREFREE HIGHWAY

THE NEW RIVER DAM

COLDWATER PARK IN AVONDALE, ARIZONA

Land Ownership

Land ownership throughout the New River and Lower Agua Fria River Corridor (Corridor) varies significantly. Ownership characteristics throughout the Corridor, especially from reach to reach, have resulted in varying degrees of urban development patterns along the River system. As much of the land area located within the 100 year flood area along the Central and Southern Reaches falls under Flood Control District of Maricopa County (FCDMC) ownership or easements, and significant portions of the Northern Reach are mixed with private, state, and local ownership. Significant portions of the New River north of the confluence of the New River and Skunk Creek to the New River community is held as privately owned land and public lands owned by Maricopa County and local, state and federal government agencies. Ownership within the Corridor's study area is reflected in **Map 5, Land Ownership**, at left.

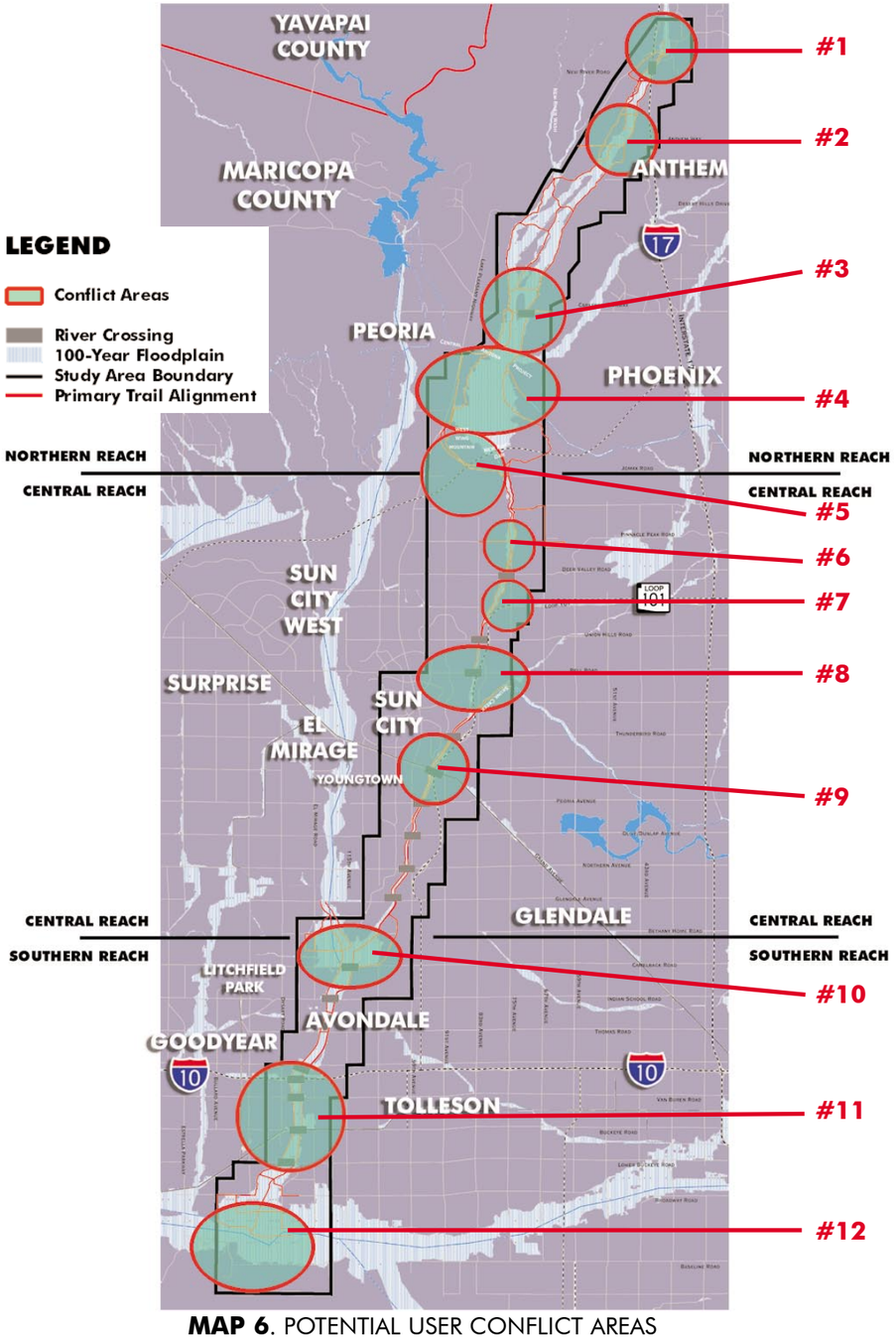
While much of the land area in the Northern Reach is rural and open space land, a variety of existing landowners have ownership along the River Corridor, including: private lands, State of Arizona, Maricopa County and the Bureau of Land Management (BLM). Also included are public land areas held by the Cities of Peoria and Phoenix. The Central Arizona Project (CAP) easement is held and managed by the CAP water district. The New River Dam and portions of the New River north of the New River Dam is under the ownership of the Flood Control District of Maricopa County (FCDMC).

The Central Reach of the New River and Lower Agua Fria River Corridor is characterized by an urban/suburban mix that is both FCDMC and privately owned. Some public land under the control of the Cities of Peoria and Glendale exist here. Lands owned by Maricopa County are also interspersed among private land.

The Southern Reach is a blend of suburban and agricultural/ranch land. Some private land ownership extends into the river corridor, yet most of the contained 100-year flood area is owned and managed by the FCDMC. Local jurisdictions such as the Cities of Phoenix and Avondale also have land ownership interest in the Southern Reach River area. For example, the Casey Abbott Recreation Area is located adjacent to the Lower Agua Fria River's confluence with the Gila River, and designated as open space by the City of Phoenix.

Throughout the Corridor, there are locations owned and/or operated by various State and Federal agencies. The Arizona Department of Transportation has easement and ownership at Interstates 10 and 17, and State Highways 74 and 60 and State Route 85 at crossings of the New River and Lower Agua Fria River. Regional, railroad rights-of-way exist where Burlington Northern-Santa Fe and Union Pacific railroad tracks intersect the New River and Lower Agua Fria River. There are also areas privately held and /or managed by various sand and gravel operations, especially in the Northern and Southern Reaches. FCDMC owns and manages much of the River channels as a part of the ongoing urban flood control mandates. Land ownership and right-of-way access is currently held in many areas along the New River and Lower Agua Fria Rivers as maintenance roads and flood control features.

The Implementation Strategies Action Plan (Action Plan) is a companion document to this Plan. The Action Plan provides additional land ownership and parcel level information to identify land ownership within the New River and Lower Agua Fria River Corridor. The Action Plan document identifies right-of-way impacts and land acquisition needs in greater detail along the River Corridor. For instance, the Action Plan describes the necessity for obtaining a continuous Primary Trail easement, perhaps 50-150 feet in width for the development of the Primary Trail along the Corridor. A more detailed map showing land parcel ownership adjacent to the primary trail is also included in the Action Plan.



MAP 6. POTENTIAL USER CONFLICT AREAS

Potential User Conflict Areas

Below is an explanation of 12 potential user conflicts as shown in **Map 6, Potential User Conflict Areas**.

Conflict Area #1 I-17 Frontage Road and New River Primary Trail Access.
The Arizona Department of Transportation (ADOT) has programmed projects for the mainline and frontage roads at I-17 at the New River. These planned projects include an underpass improvement in an area that affects the planned trail linkages for the New River trail system.

As currently proposed, the primary trail alignment will transition from the east bank of the New River (upstream from I-17) to the west bank of New River downstream from I-17. The proposed primary trail alignment then continues downstream on the west side from the I-17 frontage road bridge (west side).

As a result of this transition, the I-17 mainline and frontage road bridges will require new 12-foot wide primary trail underpass improvements-designed for seasonal flood events-to allow trail use access under the Interstate at the New River. The new west-side frontage road bridge structure will also require primary trail facilities for bicyclists and pedestrians to cross the New River. This new west-side frontage road bridge may either accommodate these trail facilities as a part of the bridge structure, or a new pre-fabricated bridge structure could be included separate from the frontage roadway bridge for trail users. Primary trail access ramps will be required to allow the primary trail to transition under the west-bank of New River and continue downstream from the Interstate and west-side frontage road bridge.

Conflict Area #2 Future Development Impacts Caused by Anthem and other Private Developments.
This area of the New River basin is experiencing significant changes due to private development and growth in the area. The Anthem developments are expected to directly impact the New River area as commercial and residential development moves toward the River channel. In addition, other uses in the area are considered as conflicting uses for a planned trail system in the area. Sand and gravel mining operations are a prime example.

The Plan calls for a number of trail types (primary, secondary, conservation and equestrian trails) in this area of the New River. As growth and development continues in this area, trail opportunities could be compromised or eliminated if this Plan is not considered.

To minimize conflicts between trail users and impacts caused by future land use activities in the area along the New River, proposed primary trail easement of 50 to 150 feet wide at the top of bank from the New River channel is proposed. Trail access and planned staging areas and gateways will be critical to the success of the New River trail system.

Conflict Area #3 Carefree Highway (SR 74) Primary Trail Access at New River.
Carefree Highway (SR 74) is a heavily used corridor for motor vehicles, recreational vehicles and trucks with direct access to Lake Pleasant Recreation Area to the west and I-17 to the east. The high vehicular traffic volumes travel at speeds of 45 miles per hour and greater at a continuous rate. The types of trail users anticipated in this remote area should be separate from the traffic that is characteristic of Carefree Highway. This area represents a potential safety hazard as trail users become increasingly present in this area once the trail system is built.

Carefree Highway and the New River area is also an ideal area for a Primary Staging Area/Gateway to the slightly remote and more pristine areas of the New River trail system. With this in mind, the design of trail use facilities, staging and parking areas are important functions and trail amenities for the New River trail system. Carefully planned staging areas, trail underpass and bridge structure widenings to accommodate trail users will minimize potential safety hazards and conflicts with trail users and motor vehicle traffic characteristic of this area.

Conflict Area #4 Central Arizona Project Canal and New River Primary Trail Access.
The Central Arizona Project Canal (CAP) right-of-way represents a tremendous opportunity as a potential linear trail corridor. However, there are potential safety concerns that go with this perceived opportunity. In order to obtain the legal right to access the CAP linear corridor, or even cross the dedicated right-of-way, planners for the trail system will need to negotiate reasonable and fair agreements addressing trail access, liability and insurance concerns affecting the CAP and other land management agencies. Ongoing efforts by other groups (Maricopa County and others) seeking legal trail access onto and across the CAP right-of-way will require coordination and agreements between multiple land management, flood control and transportation agencies.

Conflict Area #5 83rd Avenue and Jomax Road Alignment and New River Primary Trail Access.
The proposed 83rd Avenue and Jomax Road corridor alignment will have an impact on the proposed New River Trail alignment as the trail transitions from the highly urbanized area to rural desert environment north of the New River Dam. The area surrounding the New River Dam, 83rd Avenue and Jomax Road is experiencing significant growth as new roads, subdivisions, schools and parks are currently under development. The planned trail system should be considered and planned for as this ongoing development continues to encroach upon the New River drainage area and the West Wing Mountains adjacent to New River Dam and Lake Pleasant Road. Including the needs of trail users in development planning is critical to ensure future trail access.

Conflict Area #6 Sand and Gravel Mining Operation along the New River and Lower Agua Fria River.
Existing sand and gravel mining operations along the New River corridor pose specific challenges as the New River and Lower Agua Fria River Corridor trail alignment is being considered. There are inherent conflicts between sand and gravel operations and the non-motorized, shared use trail system planned along the New River and Lower Agua Fria River corridor. While sand and gravel mining operations have a legal right through operating permits to exist in the river channel locations, the planning and development of a future shared-use trail system also has strong merits as a community and neighborhood asset. The New River and Lower Agua Fria River trail system represents a prudent use that is consistent with the natural river channel, a physical feature that will be in existence in perpetuity. On the other hand, sand and gravel mining operations along the river channels come and go, pulling from the river its natural resource and usually leaving behind a blighted and scarred desert river channel. Policy to mitigate or clean up blighted areas (reclamation plans) can be instilled to create a community responsibility to restore or repair the natural desert. As the New River and Lower Agua Fria River trail continues to be developed, many trail segments will be required to address this major conflict to determine functional safety and aesthetic short and long-term solutions in areas that include sand and gravel mining operations.

Conflict Area #7 Existing Traffic Congestion between Union Hills Road and Bell Road.
In order to be implemented as a safe and continuously separate non-motorized shared-use facility, the New River and Lower Agua Fria River trail will require careful planning for trail infrastructure. The planned shared-use pathway between Union Hills Road and Bell Road, including the planned 83rd Avenue roadway bridge structure, will require several strategies to maximize user safety. The planned primary, secondary and equestrian trail facilities in this area of New River will call for new separate primary trail bridge structures and underpass facilities at arterial roadways in order to keep trail users away from existing roadways that accommodate heavy motor vehicle traffic and high travel speeds. The trail system will also need to be heavily signed to alert each trail user of congestion and hazard areas along the trails, and to educate trail user of appropriate shared-use trail etiquette. Directional and cautionary signage as depicted in the Manual of Uniform Control Devices (MUTCD) and the American Association of State Highway Officials (AASHTO) will be required along the entire length of the urban trail system.

Conflict Area #8 Confluence of the New River and Skunk Creek.
The New River/Skunk Creek confluence located downstream of Greenway Road is a challenging area given the deeply channelized New River and Skunk Creek channel, the existing Interstate Loop 101 corridor to the east and the number of destination and high use area locations in the immediate proximity. There are several school locations in this area, the Peoria Sports Complex, the Arrowhead Towne Center, and pre-existing urban trail facilities in the area, including the Skunk Creek/Arizona Diversion Canal, Sun Circle Trail and segments of trail improvement along the New River. The challenge will be to link these pre-existing trail segments together and link the numerous origin and destination locations in the area in a safe and cost effective way. Riverbed access ramps for equestrian access up stream and downstream of an existing in-channel weir structure in the New River will be necessary. A primary trail bridge structure will also be required to cross the New River channel and access the Skunk Creek and Arizona Diversion Canal trail facilities. Informational and wayfinding signage will be an important consideration in this area of the trail

Conflict Area #9 Primary Trail Access at Grand Avenue (SR 60) and the Burlington Northern Santa Fe (BNSF) Railroad.
The New River intersects with both Grand Avenue (SR 60) and the BNSF Railroad at the same location along the trail. In part, due to the heavy motor vehicle traffic congestion on SR 60 and the predominant railroad traffic along the BNSF railroad, this area of the New River and the Lower Agua Fria River trail will require an underpass facility. In addition to the traffic volumes and speed of travel by both vehicles and trains at this location, the trail would probably not meet criteria to permit pedestrians and bicyclists to cross at-grade at this railroad location. The local jurisdiction (City of Peoria) will need to coordinate efforts with several agencies, including; Arizona Department of Transportation (ADOT), the BNSF Railroad and the Flood Control District of Maricopa County (FCDMC), in order to develop an trail underpass facility at this location.

Conflict Area #10 Confluence of New River and Lower Agua Fria River-Proposed Equestrian Facility.
The confluence of the New River and the Lower Agua Fria represents a major transition for the trail. The scale of the respective river channels grows significantly and the distance between the east and west riverbank grow in proportion. A site on the north side of the confluence of the two rivers is planned as a major equestrian center facility by a private equestrian consortium. Providing primary and equestrian trail access to this facility combined with a primary staging area and gateway is an important element of this Plan. Providing primary trail bridge structures and trail ramp access will provide the needed linkages to accommodate trail users it the area. Maintaining bank protection elements combined with river and vegetation (shade and ground story plantings) restoration improvements is important considerations. Providing adequate wayfinding and directional signage will enhance the trail user experience in this area.

Conflict Area #11 Lower Agua Fria and I-10, Union Pacific Railroad and SR 85.
The one-mile arterial streets system in this portion of Phoenix and Avondale will provide an impact on trail user safety in along the Lower Agua Fria River urban trails system. In addition to the predictable pattern of one-mile grid arterial street crossings, I-10, the Union Pacific Railroad and SR 85 - Buckeye Road offer specific challenges to the urban trail system. In addition to the flood control aspects of the Lower Agua Fria River, the existing roadway and railroad corridors support heavy traffic volumes and high travel speeds. These conditions are not supportive of the development of the trail system. Specific precautions and safety measures will be required to provide trail users the ability to travel on an uninterrupted non-motorized trail facility. Options such as marked at-grade trail crossings, signalized pedestrian signals, and or underpass or overpass facilities will need to be considered in this area of the trail.

Conflict Area #12 Confluence of the Lower Agua Fria River and the Gila River and Gateway to Casey Abbott Recreation Area.
The confluence of the Lower Agua Fria River and the Gila River represents the terminus of the planned New River and Lower Agua Fria River trail. Providing for the needed trail linkages in this area, crossing both the Lower Agua Fria River and the Gila River, will be a challenge. The spans of the river channels are lengthy and existing roadway arterial bridges in the area are either non-existent or do not safely accommodate bicyclists and pedestrians. In addition, linkages to the existing Casey Abbott Recreation Area and the Estrella Mountain Regional Park and the future Tres Rios and Rio Salado trails systems will be critical.

Trail Classification

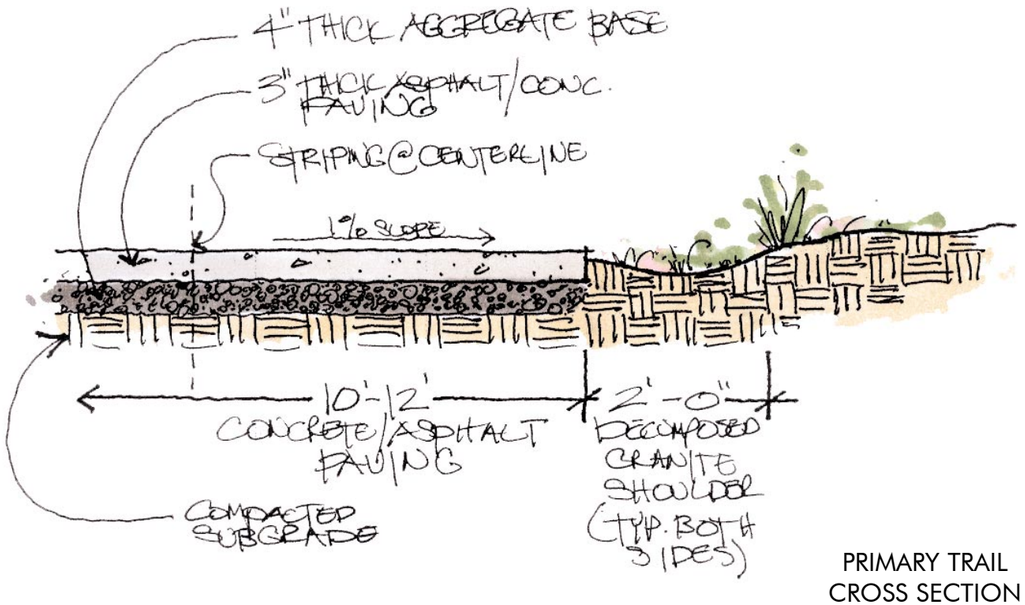
A system of trail classifications is developed to include a variety of trail types for the New River and Lower Agua Fria River Corridor. Each trail classification type is designed to accommodate various trail conditions. The trail classifications inlude:

- Primary Trail
- Secondary Trail
- Neighborhood/Transit/Connector Trail
- Conservation/Interpretive Trail
- Equestrian Corridor

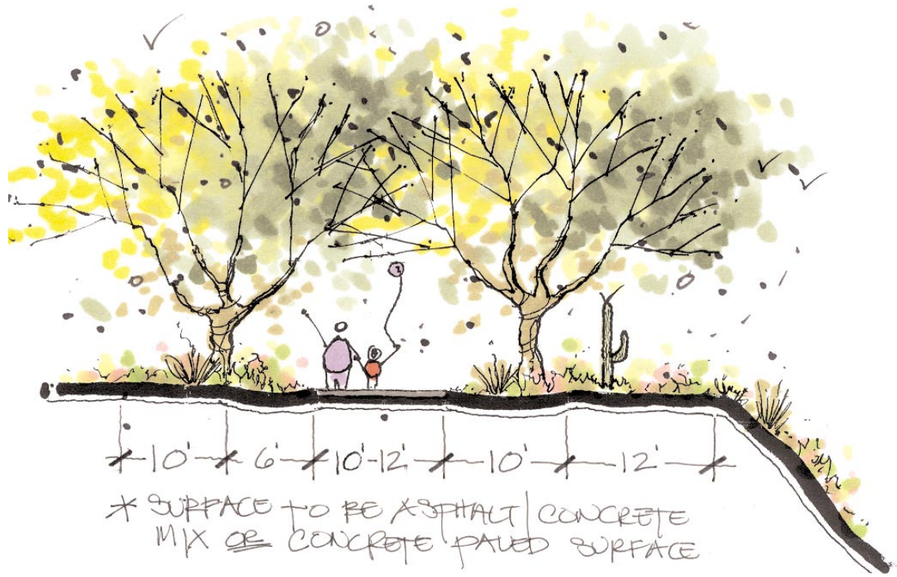
The following sections describe each type of trail.

Primary Trail

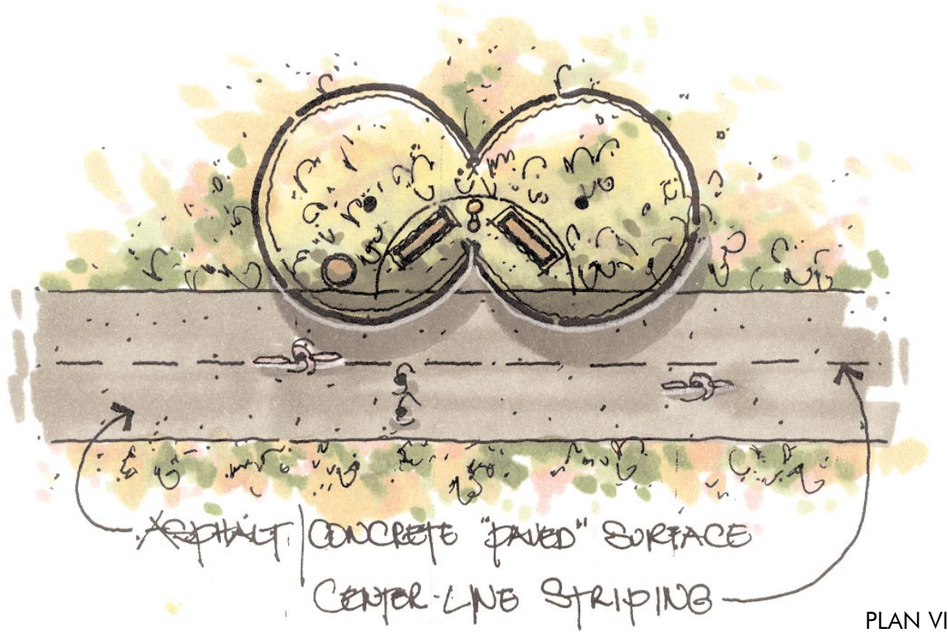
The primary trail will serve as the main trail for the New River and Lower Agua Fria River Corridor. The trail will meander continuously along the top of the riverbank along the entire 42-mile corridor, as well as at arterial bridge crossings. It will originate at major gateways and connect to all other types of trails. This trail will be a two-way, paved surface for the developed reaches of the study area, and will be universally accessible to users such as pedestrians, bicyclists, joggers, rollers (rollerbladers, rollerskaters and skateboarders), and persons of all ages and abilities.



PRIMARY TRAIL
CROSS SECTION



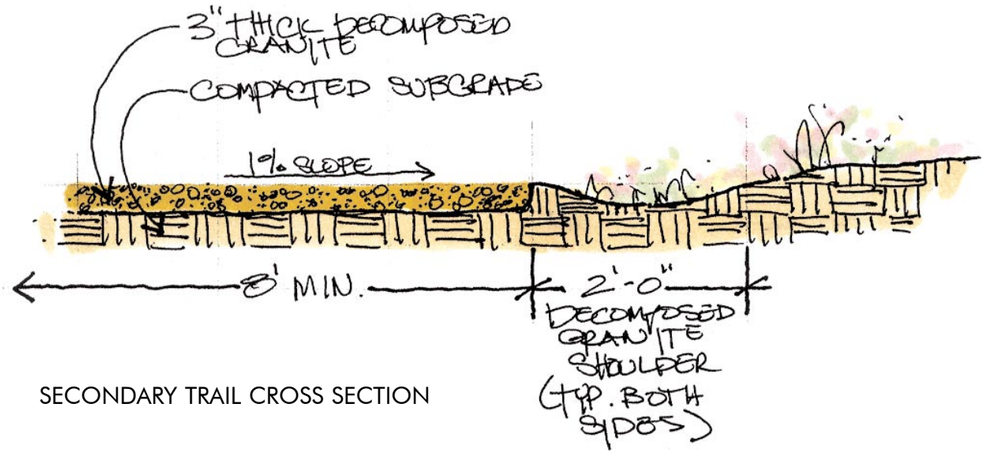
PRIMARY TRAIL SECTION



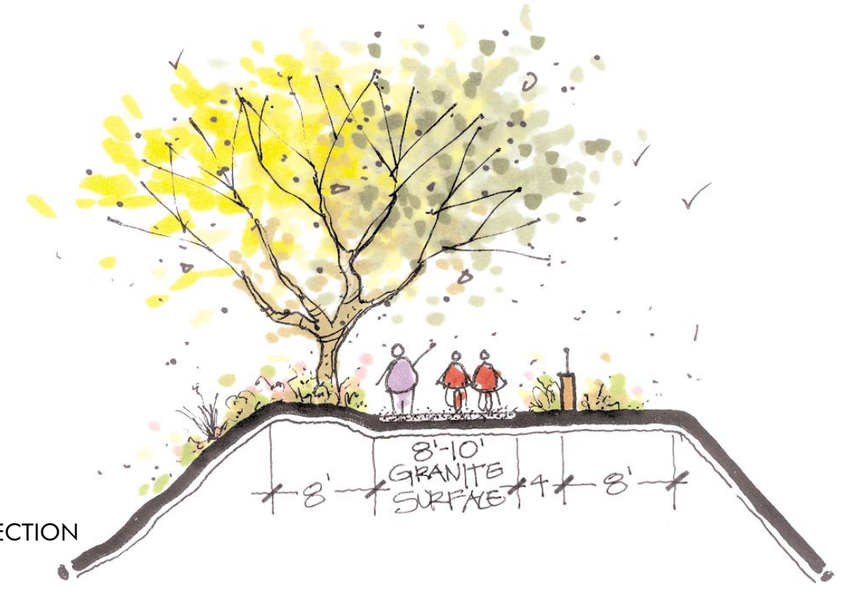
PLAN VIEW,
PRIMARY TRAIL SEGMENT

Secondary Trail

A series of secondary trails serve as trail linkages to the primary trail and provide an additional trail for pedestrians or joggers off the main trail facility. This trail type will be a two-way, decomposed granite surface. It will provide pedestrians, joggers and bicyclists and equestrians a more passive, off-road experience.



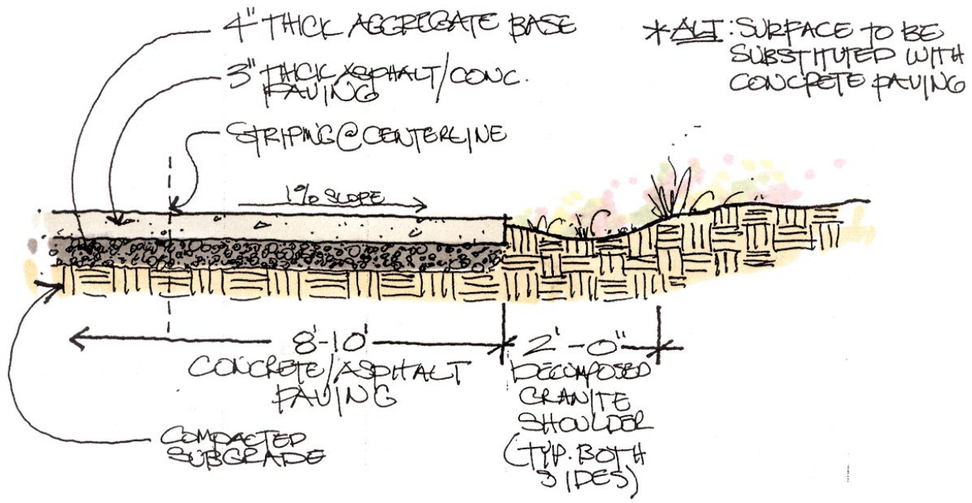
SECONDARY TRAIL CROSS SECTION



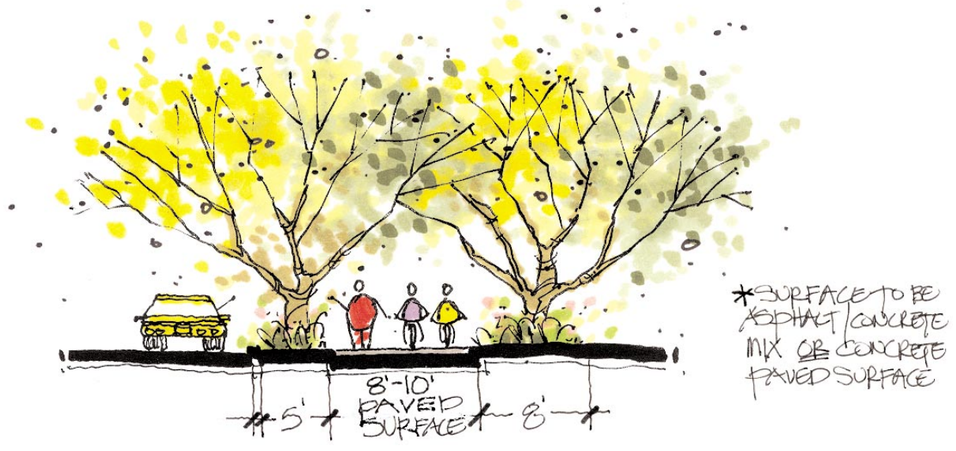
SECONDARY TRAIL SECTION

Neighborhood/Transit/Connector Trail

The neighborhood/transit/connector trail will create a tertiary series of trails, which connect the trails within the 42-mile corridor with surrounding neighborhoods, schools and adjacent transit stops and park-and-ride facilities. This trail will be a two-way, paved surface and will be universally accessible to users such as pedestrians, bicyclists, joggers, and rollers (rollerbladers, rollerskaters and skateboarders), and persons of all ages and abilities.



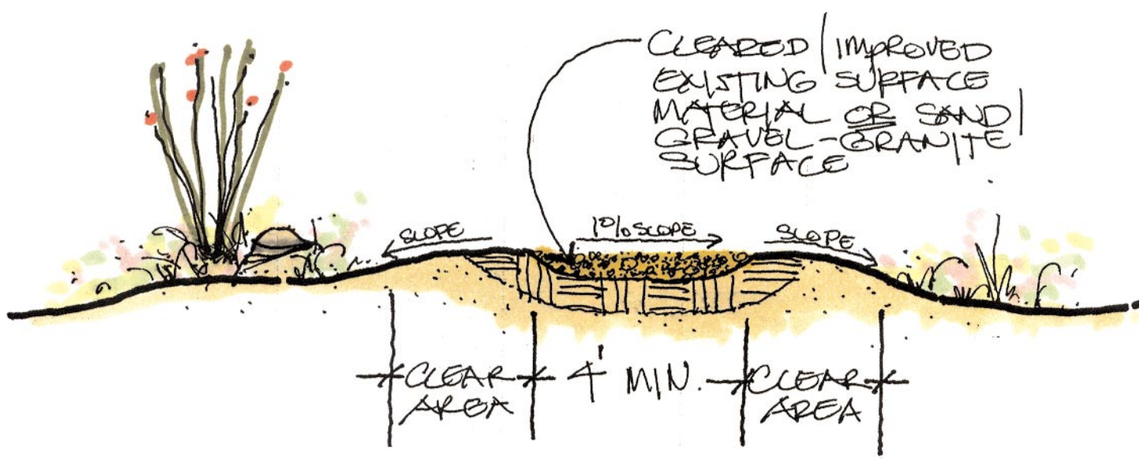
NEIGHBORHOOD/TRANSIT/CONNECTOR CROSS SECTION



NEIGHBORHOOD/TRANSIT/CONNECTOR TRAIL SECTION

Conservation/Interpretative Trail

The conservation/interpretation trail will create a more passive trail, which meanders adjacent to, and possibly throughout, landscapes which have been set aside for habitat preservation, watershed protection, or within human created landscapes such as parks or recreational areas. Interpretive/informational signage will help guide users and encourage them to "stay on the trail. This decomposed granite or sand/gravel trail will be universally accessible to pedestrians.

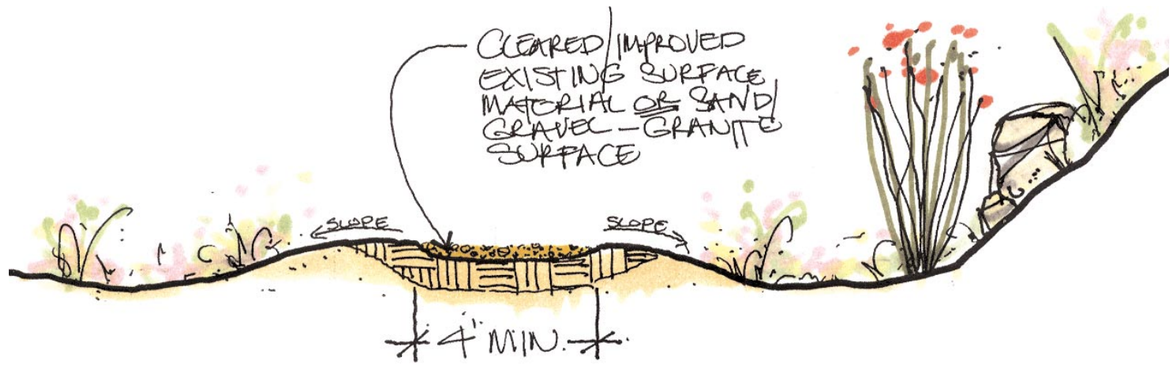


CONSERVATION/INTERPRETATION TRAIL CROSS SECTION

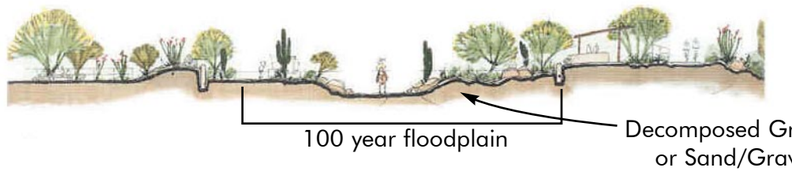
CONSERVATION/INTERPRETATION TRAIL SECTION

Equestrian Corridor

This trail type will provide a clear or improved portion of the sandy bottom wash to allow for equestrian access into and through the 42-mile corridor. Existing maintenance ramps will be utilized, whenever possible due to slope, to allow users safe access into the corridor from the top of wash banks.



EQUESTRIAN CORRIDOR CROSS SECTION



EQUESTRIAN CORRIDOR SECTION

Corridor Prototype Designs

Primary Staging Areas/Gateway

Primary staging areas are large gateway, trailhead-type nodes which serve as primary trail destination points for users to park their vehicles and access a range of trail types for bicyclists, pedestrian, and equestrian use.

Character and amenities:

- Paved entry drive and parking area (30 vehicles)
- Americans with Disabilities Act (ADA) universal accessibility (<2% cross slope and <5% running slope)
- Pedestrian trailhead/node adjacent to parking area
- Unique shade trees, accent shrubs and groundcover
- Accent paving
- Furnishings (benches and trash receptacles)
- Small, adjacent picnic areas with ramadas and barbecues
- Pedestrian scale lighting (12' poles and bollards)
- Dog "clean-up" stations
- Informational/directional signage
- Integrated public art elements
- Small-scale water features
- Permanent public facilities
- Shade ramadas
- Drinking fountains (depending on need, water availability and local preference)
- Tanks or small basins with spigots to provide water availability for horses
- Public restroom facilities

PUBLIC RESTROOM
RILLITO RIVER LINEAR PARK SYSTEM
TUCSON, ARIZONA

Secondary Staging Areas

Secondary staging areas are smaller, less formal trailheads that provide support or secondary access points including vehicular parking areas, trail access and other amenities.

Character and amenities:

- Cleared, gravel or natural earth pullout/parking area (dust control issues in central and southern reaches)
- ADA universal accessibility (<2% cross slope and <5% running slope)
- Small pedestrian trailhead/node adjacent to parking area
- Furnishings (benches and trash receptacles)
- Informational/directional signage
- Shade elements through landscaping or built structures
- Drinking fountains (depending on need, water availability and local preference)

CONCEPTUAL PRIMARY STAGING AREA

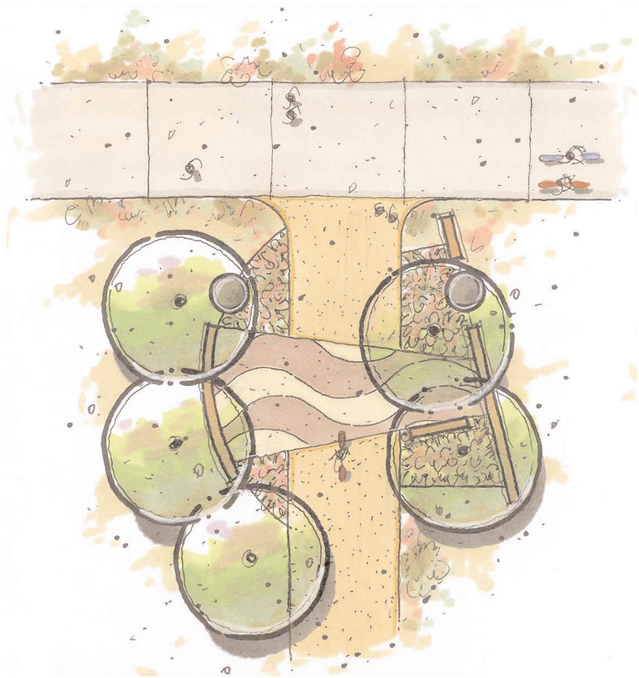
Gateway

A Gateway is the "front door" to the Corridor. Gateways aim to collectively create a series of prominent, formal entries located at specific primary entry locations, which act to create a sense of place by welcoming and informing visitors that they have entered into a unique, linear corridor system.

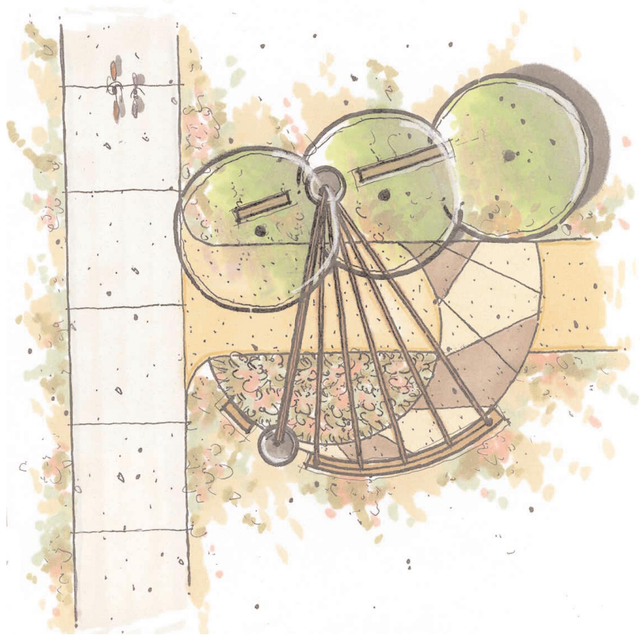
Character and amenities:

- Accent paving and seat walls
- Gateway entry feature
- ADA universal accessibility (<2% cross slope and <5% running slope)
- Unique shade trees, accent shrubs, and groundcover
- Furnishings (benches and trash receptacles)
- Pedestrian scale lighting (12' poles and bollards, if street lights do not currently exist)
- Informational/directional/interpretive signage
- Integrated public art elements
- Regulatory information signs to inform the user of the rules governing safe trail use
- Shade ramadas
- Drinking fountains (depending on need, water availability and local preference)

GATEWAY FEATURE



PLAN VIEW - GATEWAY VARIATION



PLAN VIEW - GATEWAY ENTRY AND FEATURE

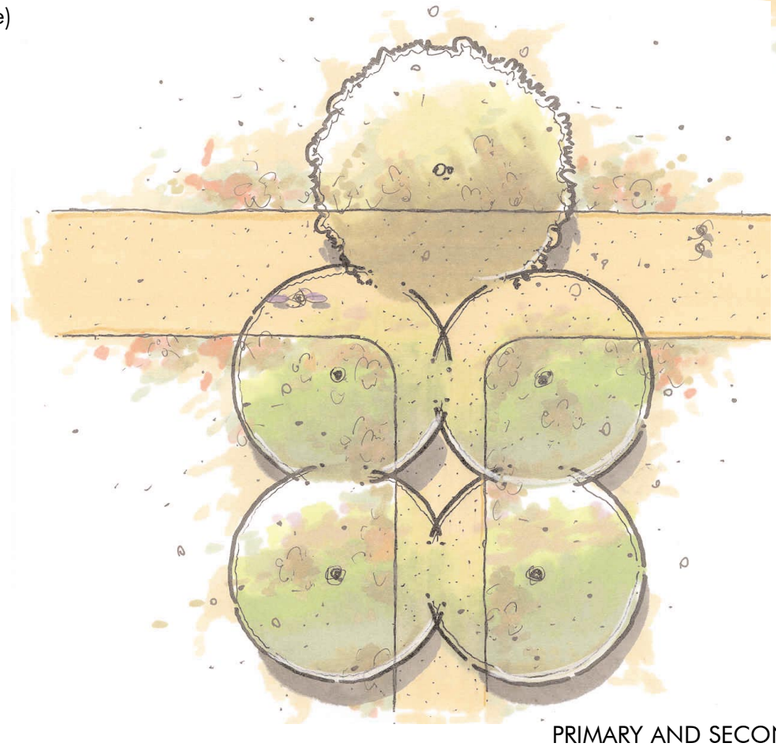
Trail Connections (Neighborhood/Transit/Connector Trail)

Trail connections between the primary trail system and other trail types (secondary, conservation/interpretative, neighborhood/transit/connector and equestrian connector trails) should be treated as a conscientious design element. The design of trail connections should respond to user safety and sight visibility, creating areas where trail types terminate or transition. The design guidelines for trail connections identify appropriate methods to treat the intersection of two or more trails.

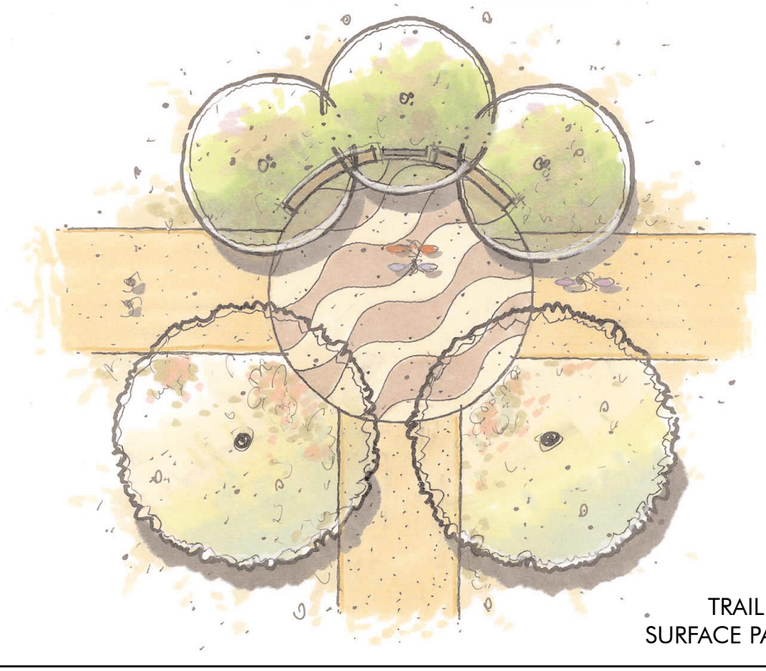
Character and amenities:

- Accent paving and seat walls
- ADA universal accessibility (<2% cross slope and <5% running slope)
- Unique shade trees, accent shrubs and groundcover
- Furnishings (benches and trash receptacles)
- Pedestrian scale lighting (bollards, if street lights do not currently exist)
- Informational/directional signage
- Drinking fountains (depending on need, water availability and local preference)

TYPICAL TRAIL CONNECTION



PRIMARY AND SECONDARY
TRAIL CONNECTION



TRAIL CONNECTION
SURFACE PAVEMENT TREATMENT

At-Grade Roadway Trail Crossings

Design guidelines for at-grade roadway trail crossings offer trail users, to the fullest extent possible, a continuous, safe and relatively unimpeded circulation route across arterial streets, while not disrupting the flow of vehicular traffic. At-grade roadway trail crossings may consist of advance 'trail crossing' warning signs and/or pavement markings to identify a formal trail crossing, or additional traffic control devices to stop motor vehicle traffic to allow the safe crossing of trail users. A number of communities have assessed various at-grade roadway designs to accommodate bicycle & pedestrian crossing traffic at major arterial streets. The appropriate design solution for a particular arterial street must be closely analyzed prior to implementation. MAG's Arterial Solutions to Pedestrian Mid-block Crossings at Canals provides a reference to the advantages and disadvantages of different trail crossings.

Character and amenities:

- Accent paving and seat walls
- ADA universal accessible ramps at curbs (<2% cross slope and <5% running slope)
- Advance warning signage and pavement markers
- Pedestrian scale lighting (12' poles or bollards, if street lights do not currently exist)
- Amenities to ensure pedestrian safety (pedestrian acuated signals or 'yellow' flasher lights)
- Full lighted/signalized pedestrian crossings where appropriate
- Informational/directional signage

There are currently over 24 river crossings along the New River and Lower Agua Fria River Corridor. Many of these river crossings are improved above-grade bridge structures located along the mile-grid arterial street network, at existing railroad crossings, and at ADOT interstate locations. Other crossings include dirt roads or paved at-grade crossings. Each intersection/primary trail crossing will require an assessment of design alternatives to determine the most appropriate solution at each location

ARTERIAL/TRAIL CROSSING VARIATION

UNIQUE TRAFFIC SIGNALIZATION CONTROL DEVICE FOR BICYCLE AND PEDESTRIAN CROSSING AT URBAN ARTERIAL STREETS

TYPICAL ARTERIAL/TRAIL CROSSING

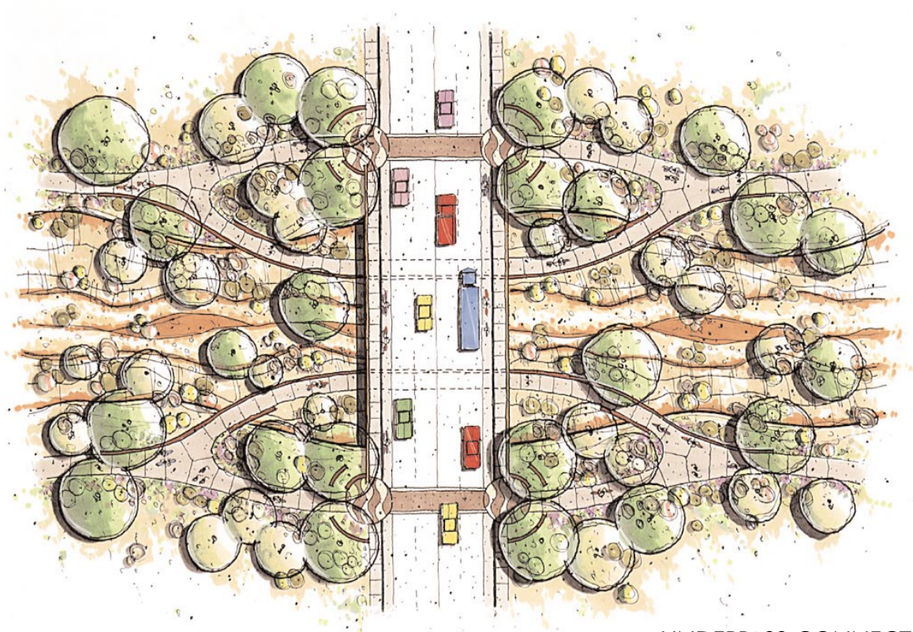
Overpass/Underpass Connections

Design guidelines for overpass/underpass connections aim to provide primary trail users a continuous, safe and relatively unimpeded circulation route across arterial roadway and railroad intersections, while not disrupting the flow of vehicular traffic. An overpass connection permits a trail to cross a roadway, usually by means of a footbridge over the roadway. An underpass connection allows for a trail to cross a roadway or rail line by lowering the trail system beneath the roadway. Each design option has strong advantages and disadvantages. Right-of-way availability, cost, and trail user safety are primary consdiderations.

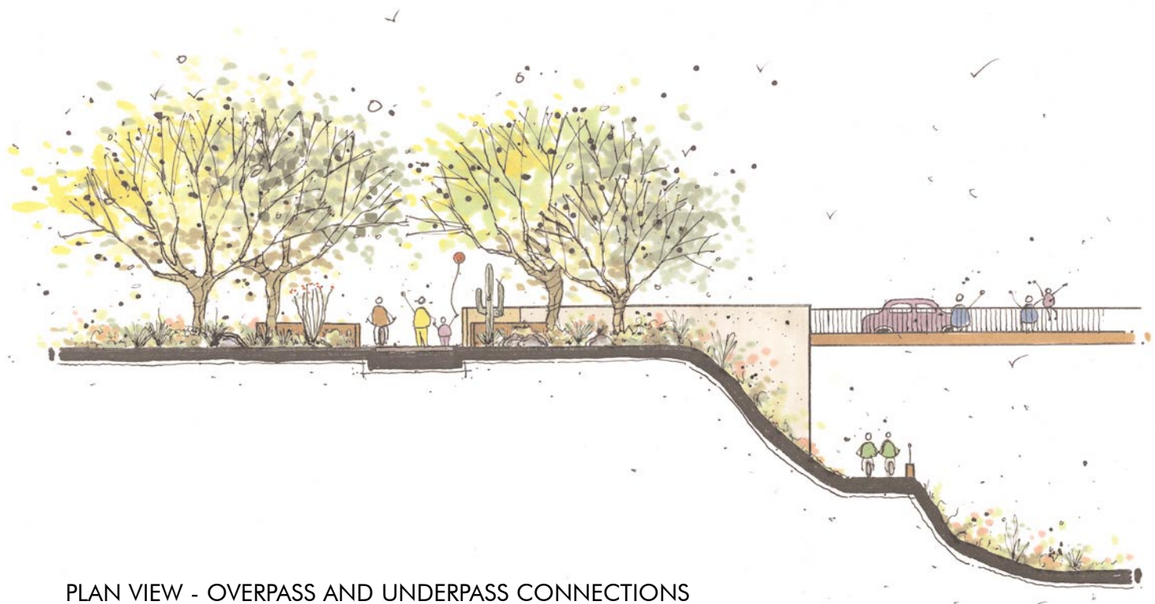
Character and amenities:

- Accent paving and seat walls
- ADA universal accessibility (<2% cross slope and <5% running slope)
- Minimum height and width clearances (vary depending on roadway, rail line, and flood control guidelines)
- Hand rail - safety rail amenities
- Pedestrian scale lighting at underpass and overpass facilities
- Amenities to ensure pedestrian safety – escape access points, call box locations
- Graffiti abatement techniques
- Bank protection improvements
- Adequate sight clearances to allow trail users to visually access other side of underpass or overpass facility

UNDERPASS CONNECTION AT 75TH AVENUE AND SKUNK CREEK



UNDERPASS CONNECTION



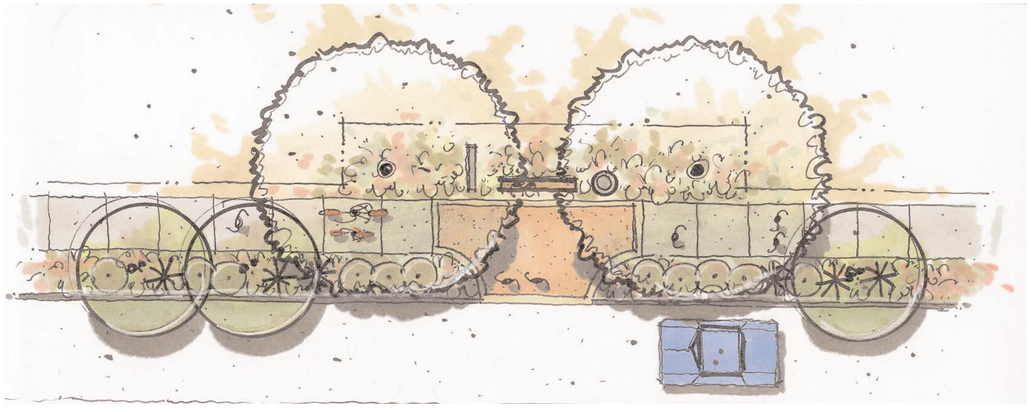
PLAN VIEW - OVERPASS AND UNDERPASS CONNECTIONS

Transit Nodes

Design guidelines for public transit nodes is an important multi-modal transportation consideration for the 42-mile West Valley Multi-Modal Corridor. The following illustrates appropriate treatments for public transit bus stop facilities to maximize pedestrian safety and comfort, provide access to trails within, and adjacent to, the Corridor.

Character and amenities:

- Accent paving and seat walls
- Transit bus pull-out lanes (if appropriate)
- ADA universal accessible ramps (<2% cross slope and <5% running slope)
- Shade trees and accent shrubs
- Furnishings (benches and trash receptacles)and bus shelters
- Pedestrian scale lighting (12' poles and bollards, if street lights do not currently exist)
- Amenities to ensure pedestrian and transit safety
- Sight visibility for bicycle and pedestrians accessing transit stops and primary trail connectors
- Informational/directional signage (for trail users and public transit patrons)
- Drinking fountains (depending on need, water availability and local preference)



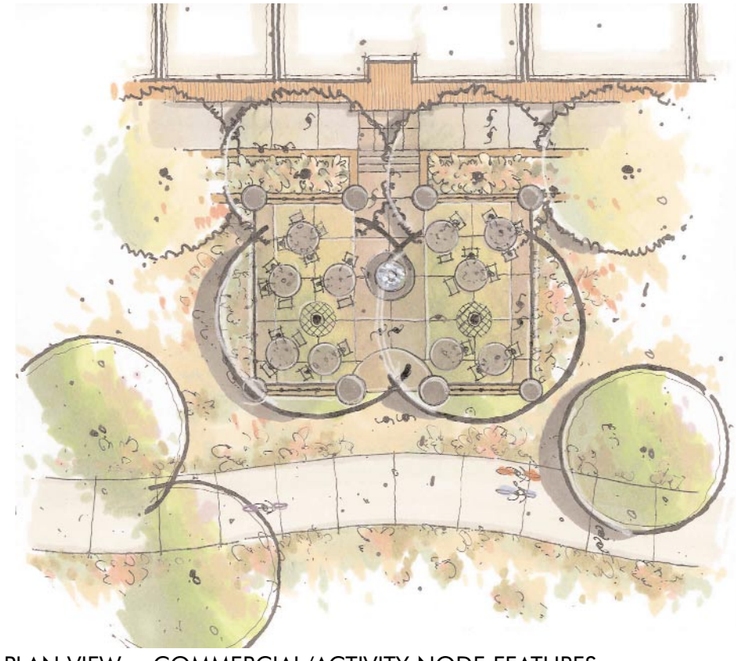
PLAN VIEW - TRANSIT STOP VARIATION

Commercial/Activity Nodes

Commercial/activity nodes may be located at various locations along the West Valley Rivers Corridor. Design guidelines for Commercial/activity nodes help to create a pedestrian oriented focal point of "activity" or commercial/retail/entertainment amenities for both local users and tourists alike. Commercial/activity nodes are intended to encourage businesses to front the New River and Lower Agua Fria River Corridor to establish a seamless connection between the built urban fabric and the natural amenities provided by the river corridor.

Character and amenities:

- Accent paving and seat walls
- Space for outdoor cafes, dining and plazas overlooking/adjacent to corridor
- ADA universal accessibility (<2% cross slope and <5% running slope)
- Unique shade trees, accent shrubs and groundcover
- Furnishings (benches and trash receptacles)
- Pedestrian scale lighting (12' poles and bollards, if street lights do not currently exist)
- Amenities to ensure pedestrian safety along primary trail and connector trail linkages
- Lighted/signalized pedestrian crossings to access high pedestrian activity nodes
- Informational/directional/interpretive signage
- Public artwork and/or water features
- Thematic façade/architectural treatments, ramadas, and pedestrian promenades
- Drinking fountains (depending on need, water availability and local preference)
- Childrens' play areas
- Access to parking area (for motor vehicle and bicycle parking
- Gateways and staging area amenities
- Safety rails at riverbank area



PLAN VIEW - COMMERCIAL/ACTIVITY NODE FEATURES

THE MASTER PLAN

The Master Plan provides a continuous alignment for non-motorized users of differing abilities and ages. This trail system serves to link different plans within the MAG region and develop a contiguous and viable corridor for a broader range of users. The Master Plan establishes a regional trail system, creates an identity for communities along the West Valley Rivers, provides educational and interpretive opportunities for area residents, helps to conserve riparian resources from the detrimental effects of urban development and provides many other benefits to the area.

Most cities in the study area currently reflect planned trails along the West Valley Multi-Modal Transportation Corridor and are willing to be part of the proposed Corridor Plan. Opportunities also exist to link the proposed multi-use trail system with residential areas, bus routes, open space systems (Skunk Creek and the Arizona, Grand and CAP Canals), and commercial, retail, office and civic and multi-purpose facilities. Linking inter-jurisdictional trails with these opportunities will provide an interconnected system that not only encourages recreational possibilities, but that also supports alternative modes of transportation for home-to-work and shopping trips.

TRAIL TYPES

Primary Trail - this represents the primary trail, a two-way, 10 to 12 foot paved surface that will meander continuously along the top of the riverbank for the entire 42-mile Corridor and connect to the other four trail types.

Secondary Trail - this represents the secondary trail, a two-way, 8 to 10 foot decomposed granite or hard-packed dirt surface for a more passive trail that also serves as a linkage to the primary trail.

Neighborhood/Transit/Connector Trail - this represents the neighborhood/transit/connector trail, an 8 to 10 foot paved tertiary series of trails, which connect trails within the Corridor to surrounding neighborhoods, schools and adjacent transit stops and park-and-ride facilities.

Conservation/Interpretation Trail - this represents the conservation/interpretation trail, 4 to 6 foot decomposed granite or hard-packed dirt trail, which meanders adjacent to, and possibly throughout, landscapes which have been set aside for habitat preservation, watershed protection, or within landscapes such as parks or recreational areas

Equestrian Corridor - this represents the equestrian corridor, a 4 to 6 foot clear or improved portion of the sandy bottom wash to allow for equestrian access into and through Corridor.

TRAIL ELEMENTS

Map 7, Master Plan Map, reflects all sixteen segments within the Corridor and their Activity Nodes and Trail types. The trail types are described in the "Trail Classification" section in Chapter 2, Analysis & Classification. Activity nodes are described in “Corridor Prototype Designs”.

Maps 9-24, Individual Trail Segment Maps, depict each of the individual sixteen New River and Lower Agua Fria River Corridor segments. Included with each map are matrices that quantify the number of activity nodes and the distance of each trail type within each segment. In addition, design considerations for each segment are included, as well as representative river channel cross sections, where they are relevant. These maps include the activity nodes defined above, in addition to those below:

Corridor Prototype Designs

Gateway - this represents a significant entrance to the trail/trail system or node along the trail system, containing features symbolic of the particular landscape in which it is located.

Primary Staging Area/Gateway - this represents an area meant to function as a trailhead and include full parking facilities and rest area features.

Secondary Staging Area - this represents an area meant to serve the same function as the primary staging area, but with smaller, scaled-back facilities suitable for neighborhood, commercial, and employment areas.

Trail Connection - this represents a significant confluence of external trails with the primary trail.

Riverbed Access Ramp - this represents an area where an access ramp is necessary for bicycle/pedestrian/equestrian access to trails located within the riverbed.

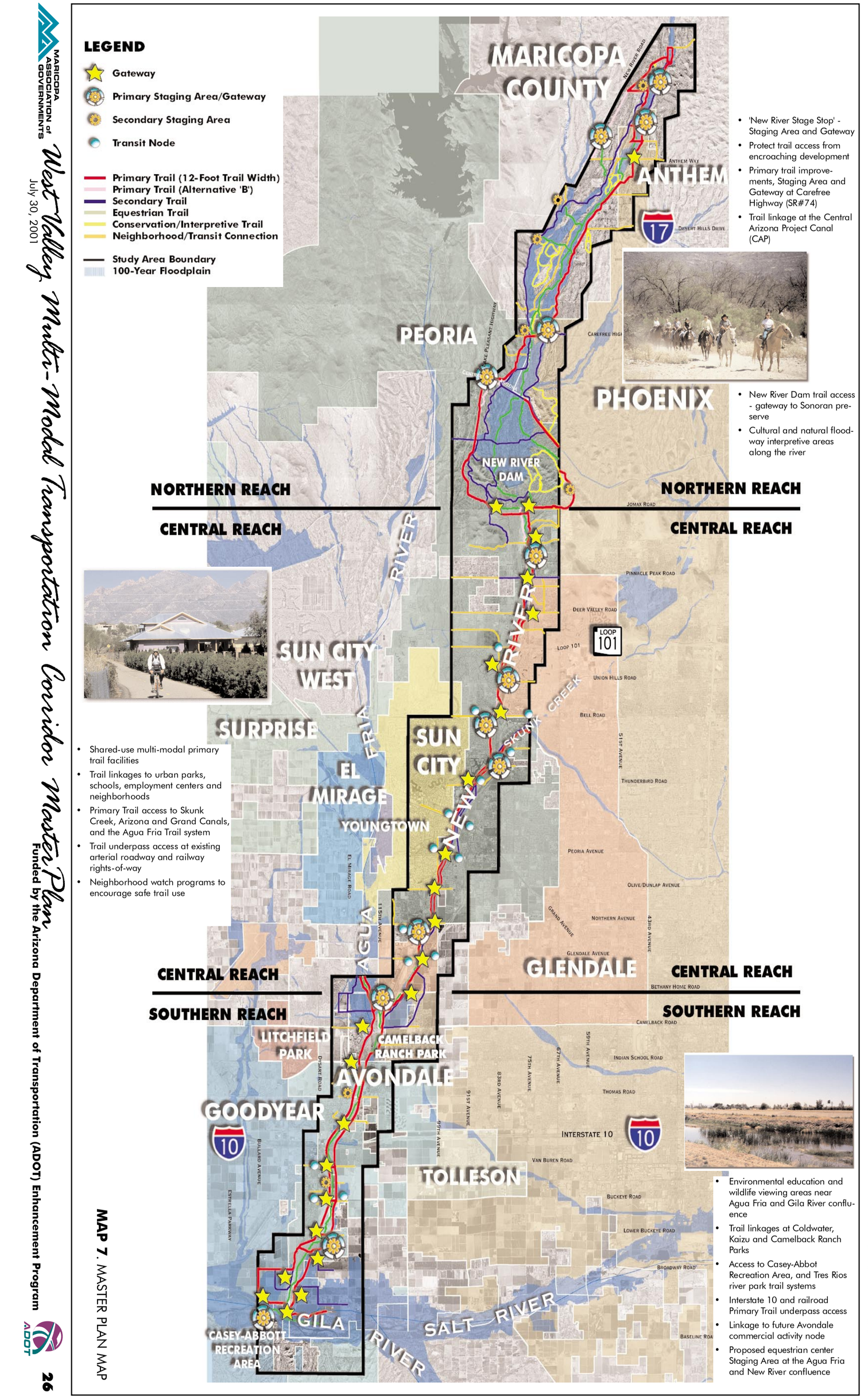
Future Roadway Bridge - this represents the location of a new roadway bridge which is not included in the cost estimates for this Plan, but are in the Capital Improvement Programs of the various jurisdictions.

Primary Trail Bridge Structure - this represents the location of a prefabricated (constructed off-site) bridge for non-vehicular use only (bicycle/pedestrian/equestrian).

Transit Connection Node - this represents a transit stop connected to the trail system at a neighborhood/transit/connector trail.

Trail Underpass Improvement - this represents a point indicating an existing bridge structure that is in need of enhancement to allow for bicycle/pedestrian/equestrian traffic to pass under without difficulty.

At-Grade Primary Trail Crossing - this represents a location where the primary trail crosses a roadway or railroad line at-grade that will require pavement markings or signalization and signage.



- 'New River Stage Stop' - Staging Area and Gateway
- Protect trail access from encroaching development
- Primary trail improvements, Staging Area and Gateway at Carefree Highway (SR#74)
- Trail linkage at the Central Arizona Project Canal (CAP)

- New River Dam trail access - gateway to Sonoran preserve
- Cultural and natural floodway interpretive areas along the river

- Shared-use multi-modal primary trail facilities
- Trail linkages to urban parks, schools, employment centers and neighborhoods
- Primary Trail access to Skunk Creek, Arizona and Grand Canals, and the Agua Fria Trail system
- Trail underpass access at existing arterial roadway and railway rights-of-way
- Neighborhood watch programs to encourage safe trail use

- Environmental education and wildlife viewing areas near Agua Fria and Gila River confluence
- Trail linkages at Coldwater, Kaizu and Camelback Ranch Parks
- Access to Casey-Abbot Recreation Area, and Tres Rios river park trail systems
- Interstate 10 and railroad Primary Trail underpass access
- Linkage to future Avondale commercial activity node
- Proposed equestrian center Staging Area at the Agua Fria and New River confluence

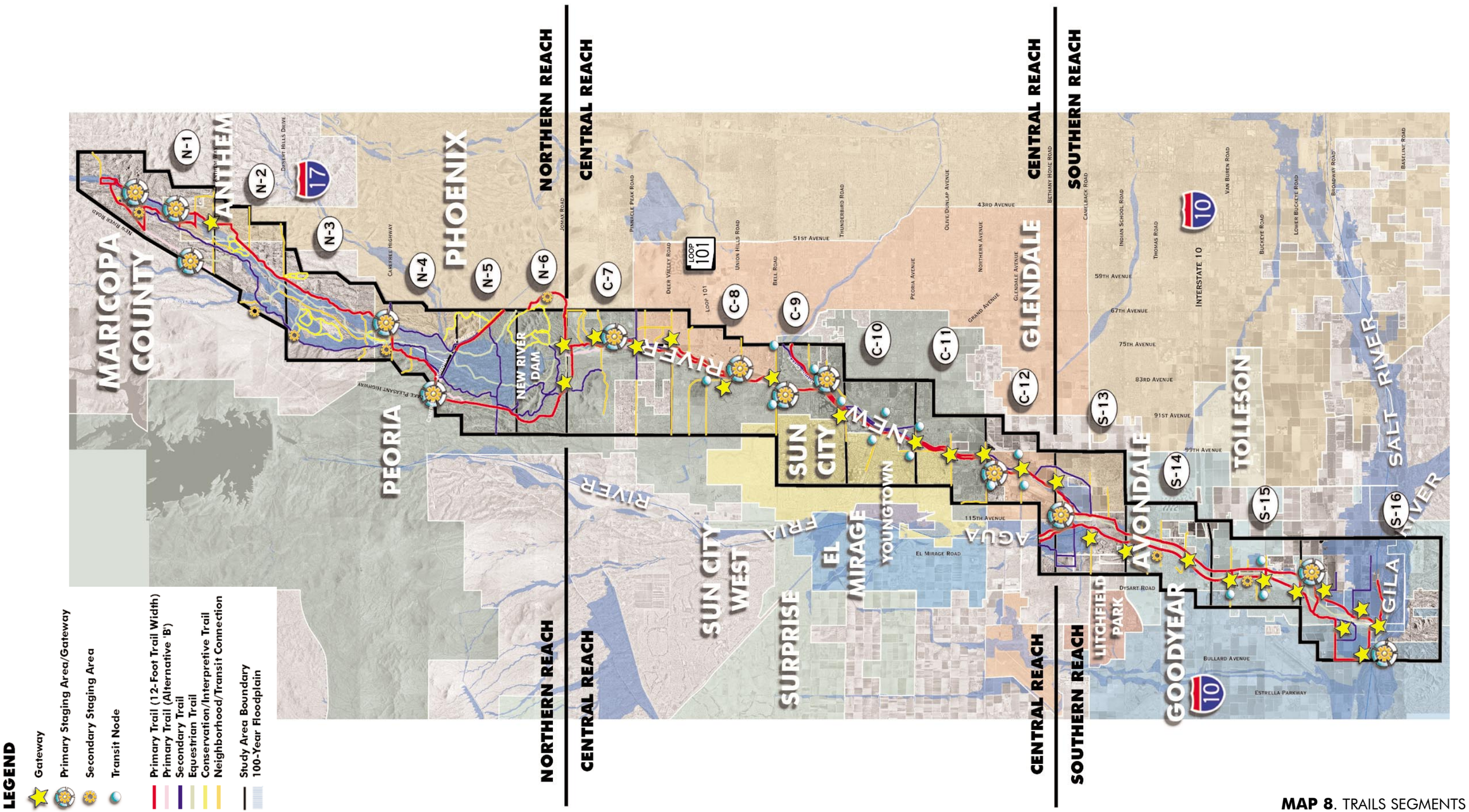
MAP 7. MASTER PLAN MAP

TRAIL SEGMENTS

To more effectively plan, implement, and manage areas for design and development, the 42-mile New River and Lower Agua Fria River was divided into 16 trail segments **(see Map 8, Trail Segments Map)**. These segments were determined by:

- Reach:
  1. Northern reach- from the community of New River south to the New River Dam
  2. Central reach- from the New River Dam south to the confluence with the Agua Fria River
  3. Southern reach- from the Lower Agua Fria River/confluence with the New River south to the Gila River
- Jurisdictions: Maricopa County, Peoria, Phoenix, Glendale, Avondale. Each segment falls within one jurisdiction, where possible.
- Approximate length of 2.5 to 3 miles. This length is considered a minimum desired distance for incurred costs, budget limitations and trail management from a trail design and development standpoint.
- Geographical and other features that serve as logical boundaries, such as the New River's confluence with the Agua Fria River.

EQUESTRIAN CORRIDOR USERS



MAP 8. TRAILS SEGMENTS MAP

Trail Type	Width (Feet)	Distance (Linear Feet)	Distance (in Miles)	Material
Primary Trail	10-12	45,743	8.7	asphalt/concrete
Secondary Trail	8-10	43,067	8.2	decomposed granite
Neighborhood/Transit/Connector	8-10	24,509	4.6	asphalt/concrete
Conservation/Interpretive Trail	4-6	7,284	1.4	decomposed granite
Equestrian Corridor	4-6	30,253	5.7	sand/gravel

NEW RIVER – TYPICAL CROSS SECTION (NORTHERN REACH)

Trail Amenities	Symbol	Quantity
Gateway		1
Primary Staging Area/Gateway		3
Secondary Staging Area		1
Trail Connection		7
Riverbed Access Ramp		2
Future Roadway Bridge		3
Prefabricated Pedestrian Bridge		2
Transit Connection Node		0
Trail Underpass Improvements		4
At-Grade Primary Trail Crossing		0

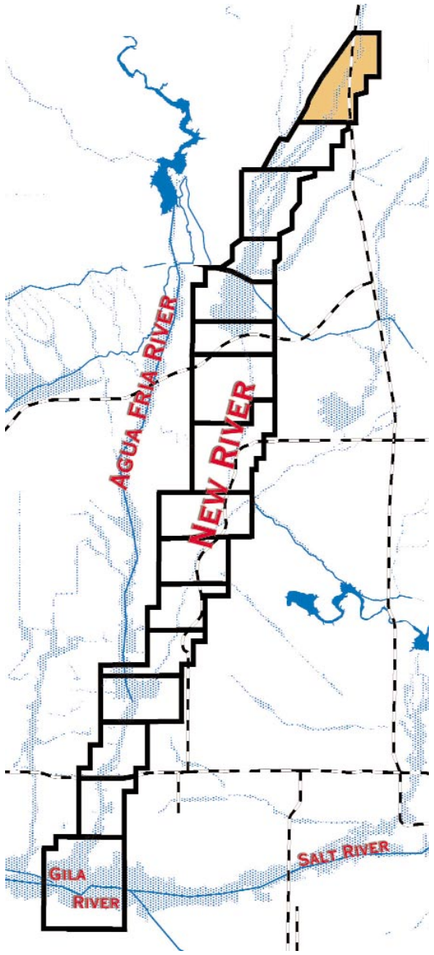
TRAIL SEGMENT N-1

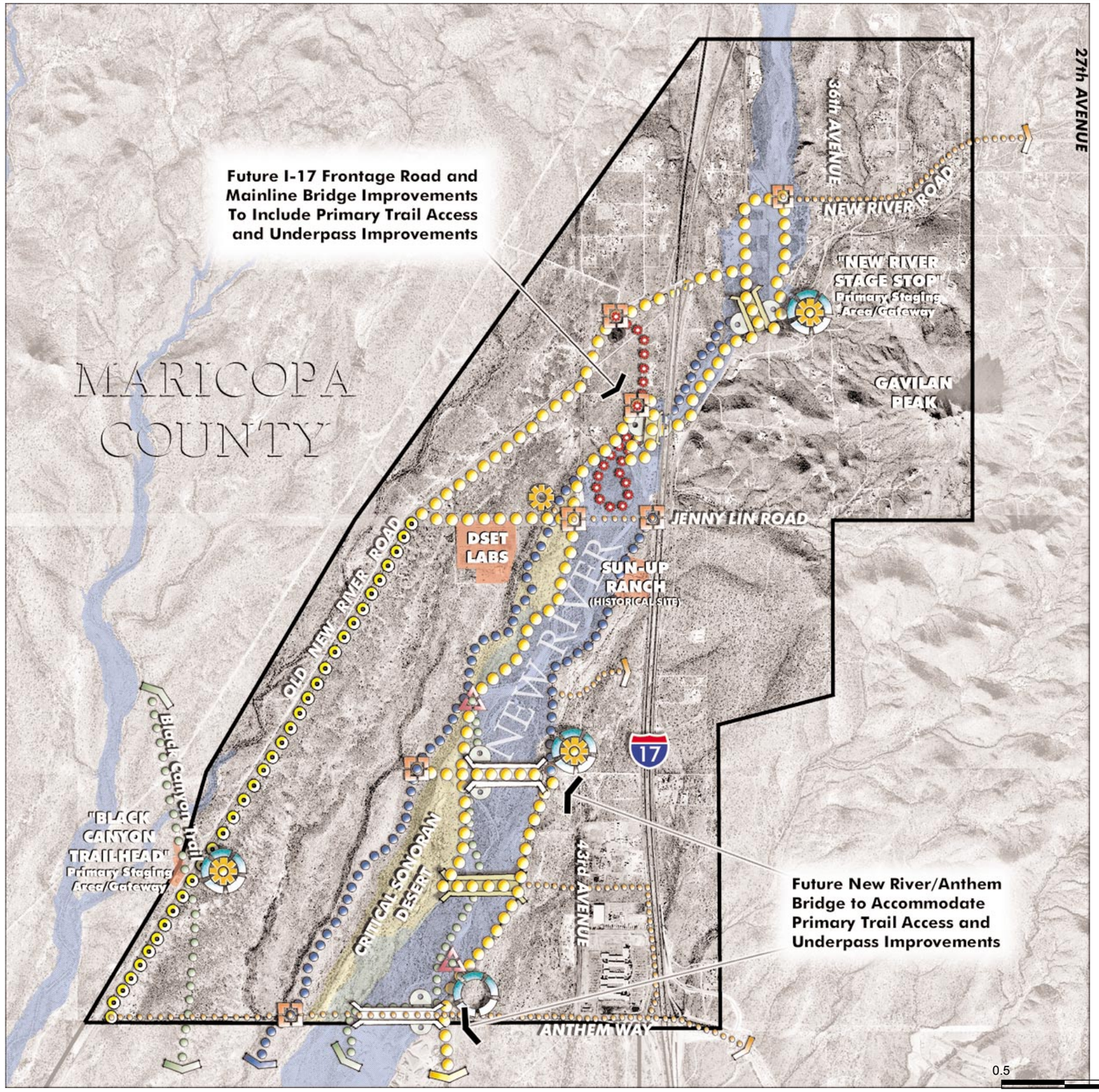
New River/I-17 to Anthem Way

Affected Jurisdictions: Maricopa County, Arizona Department of Transportation (ADOT), City of Phoenix, Private Lands

Design Considerations:

- Maricopa County and ADOT should coordinate the design development of new frontage road and bridge structure on west side of I-17 at the New River. The planned bridge structure should accommodate access for bicycle travel on the bridge structure as well as provide needed underpass accommodations for Primary Trail linkages on west bank of New River. This planned ADOT capital improvement project should include a paved trail underpass facility and required ramps to access the bridge structure.
- A series of three planned at-grade river crossings will be located at Anthem Way development. These planned at-grade river crossings will ultimately be developed as above-grade bridge crossings and should be designed to accommodate primary trail underpass improvements to accommodate bicycle and pedestrian trail improvements.
- Sonoran upland desert plant life along the west bank of the New River below the I-17 New River to the Anthem Way area represent a healthy and diverse range of plant materials. Primary and secondary trails throughout this area should serve to protect the existing natural desert as much as possible.
- Primary trail linkage to the Bureau of Land Management (BLM) Black Canyon Trail day use and trailhead facility at New River Road is needed.
- A minimum of 150 feet linear desert between the Anthem Way development and the primary trail corridor should be preserved.
- Provide future neighborhood and commercial area access at Anthem Way and the New River Primary Trail on the east-bank.
- New developments located adjacent to the trail should be required to include trail improvements as per the West Valley Multi-Modal Transportation Corridor Master Plan.
- For many years prior to the development of any formal roads in the area the Old New River stage stop was a primary stage line stop for the Black Canyon Stage line, providing transportation services from Phoenix to Prescott, Arizona. This route should be addressed in interpretive signage as an important historical transportation function of the New River trail system.
- Primary river channel maintains most floodwaters, some bank erosion in major flood events resulting in unstable bank conditions.





MAP 9. TRAIL SEGMENT N-1 (NORTHERN REACH)

- PRIMARY TRAIL
- SECONDARY TRAIL
- NEIGHBORHOOD/TRANSIT CONNECTOR TRAIL
- CONSERVATION/INTERPRETIVE TRAIL
- EQUESTRIAN CORRIDOR
- ALTERNATE TRAIL ROUTE 'B'
- MAINTENANCE ROAD/PRIMARY TRAIL
- STUDY AREA BOUNDARY
- 100 YEAR FLOODPLAIN
- GATEWAY
- PRIMARY STAGING AREA/GATEWAY
- SECONDARY STAGING AREA
- TRAIL CONNECTION
- RIVERBED ACCESS RAMP
- FUTURE ROADWAY BRIDGE
- PREFABRICATED PEDESTRIAN BRIDGE
- TRANSIT CONNECTION NODE
- TRAIL UNDERPASS IMPROVEMENTS
- AT-GRADE PRIMARY TRAIL CROSSING

Trail Type	Width (Feet)	Distance (Linear Feet)	Distance (in Miles)	Material
Primary Trail	10-12	40,413	7.7	asphalt/concrete
Secondary Trail	8-10	25,435	4.8	decomposed granite
Neighborhood/Transit/Connector	8-10	28,180	5.3	asphalt/concrete
Conservation/Interpretive Trail	4-6	20,653	3.9	decomposed granite
Equestrian Corridor	4-6	53,234	10.1	sand/gravel

RIVER CHANNEL CROSS SECTION

Trail Amenities	Symbol	Quantity
Gateway		0
Primary Staging Area/Gateway		0
Secondary Staging Area		1
Trail Connection		4
Riverbed Access Ramp		0
Future Roadway Bridge		0
Prefabricated Pedestrian Bridge		0
Transit Connection Node		0
Trail Underpass Improvements		0
At-Grade Primary Trail Crossing		0

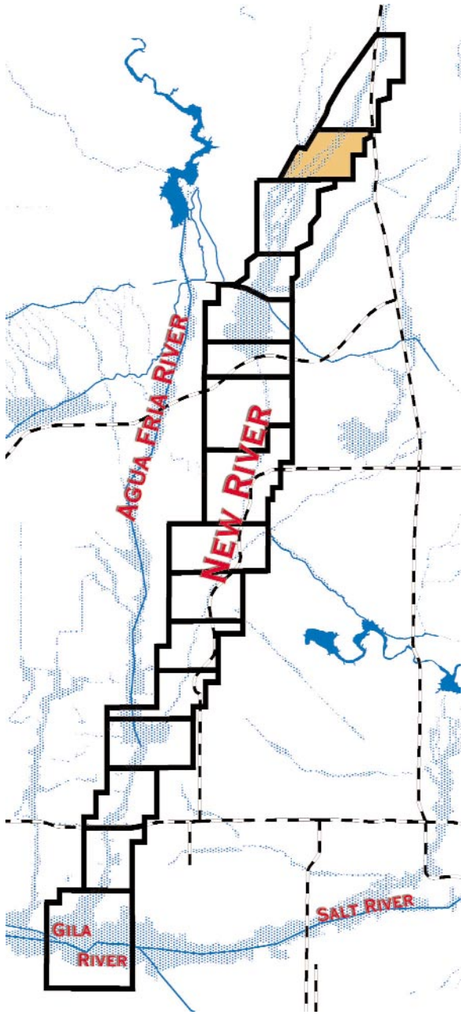
TRAIL SEGMENT N-2

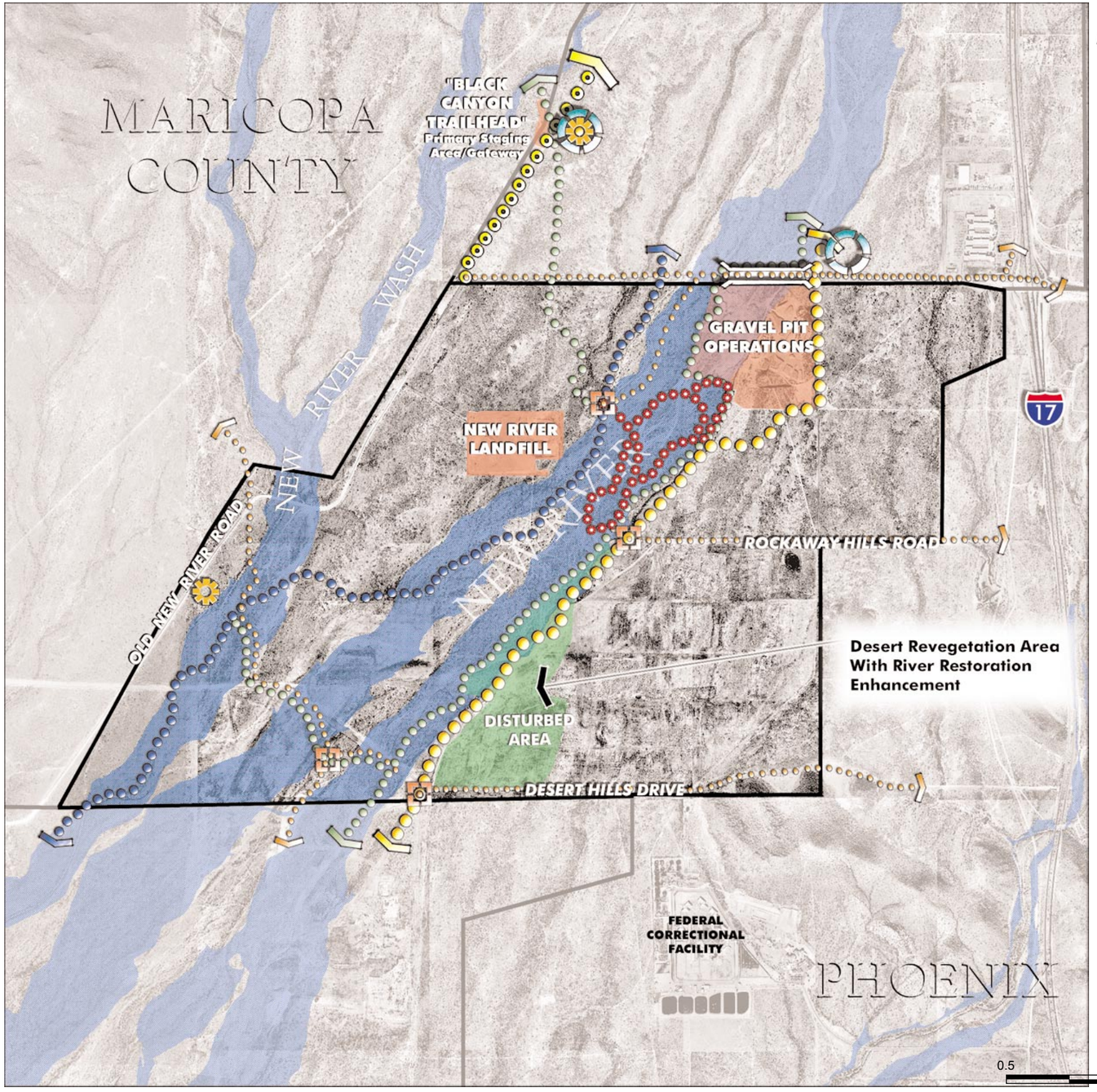
Anthem Way to Desert Hills Drive

Affected Jurisdictions: Maricopa County, Phoenix

Design Considerations:

- A primary trail will be located along the east bank of New River with a short-term at-grade river channel crossing at Anthem Way. This river crossing will eventually be developed into an above-grade bridge structure to accommodate vehicles for the Anthem Way development. The planned bridge structure should be designed to accommodate Primary Trail access with an underpass for bicycle and pedestrians. The bridge structure should also accommodate trail user facilities on the bridge. The primary trail facility will also link west to the BLM Black Canyon Trailhead facility at New River Road. The primary trail will continue along the east bank to Carefree Highway (SR 74) to link to a planned primary staging area/gateway at Carefree Highway.
- Sonoran upland desert habitat is this area of the New River has undergone significant disturbance with development, utility infrastructure, landfill and mining operations and wildcat off-road recreational uses. A designated primary trail easement in this area should be defined to redevelop the desert environment.
- Provide an improved equestrian and secondary trail linkage along the New River Wash to the Bureau of Land Management (BLM) Black Canyon Trail day use and trailhead facility at New River Road.
- New developments located adjacent to the New River trails system should be required to include Trail improvements as per the West Valley Multi-Modal Transportation Corridor Master Plan. Preserve a minimum of 150 feet linear desert set aside between the Anthem Way development and the primary trail corridor. Require new developments to restore disturbed Sonoran desert vegetation along east-bank of New River as future development begins to approach the river channel and the open space set aside area.
- Provide future neighborhood and commercial area access south of Anthem Way and the New River Primary Trail on the east bank.
- This trail segment calls for the development of a series of loop trails as conservation/interpretation trails for hiking, mountain biking and equestrian uses. These designated loop trails should be designed as universally accessible and as interpretive trails to inform the public about the historic, environmental and cultural significance of the Corridor.





MAP 10. TRAIL SEGMENT N-2 (NORTHERN REACH)

- PRIMARY TRAIL
- SECONDARY TRAIL
- NEIGHBORHOOD/TRANSIT CONNECTOR TRAIL
- CONSERVATION/INTERPRETIVE TRAIL
- EQUESTRIAN CORRIDOR
- ALTERNATE TRAIL ROUTE 'B'
- MAINTENANCE ROAD/PRIMARY TRAIL
- STUDY AREA BOUNDARY
- 100 YEAR FLOODPLAIN
- GATEWAY
- PRIMARY STAGING AREA/GATEWAY
- SECONDARY STAGING AREA
- TRAIL CONNECTION
- RIVERBED ACCESS RAMP
- FUTURE ROADWAY BRIDGE
- PREFABRICATED PEDESTRIAN BRIDGE
- TRANSIT CONNECTION NODE
- TRAIL UNDERPASS IMPROVEMENTS
- AT-GRADE PRIMARY TRAIL CROSSING

Trail Type	Width (Feet)	Distance (Linear Feet)	Distance (in Miles)	Material
Primary Trail	10-12	34,733	6.6	asphalt/concrete
Secondary Trail	8-10	53,537	10.1	decomposed granite
Neighborhood/Transit/Connector	8-10	26,040	4.9	asphalt/concrete
Conservation/Interpretive Trail	4-6	45,070	8.5	decomposed granite
Equestrian Corridor	4-6	59,707	11.3	sand/gravel

RIVER CHANNEL CROSS SECTION

Trail Amenities	Symbol	Quantity
Gateway		0
Primary Staging Area/Gateway		1
Secondary Staging Area		2
Trail Connection		6
Riverbed Access Ramp		1
Future Roadway Bridge		0
Prefabricated Pedestrian Bridge		1
Transit Connection Node		0
Trail Underpass Improvements		0
At-Grade Primary Trail Crossing		0

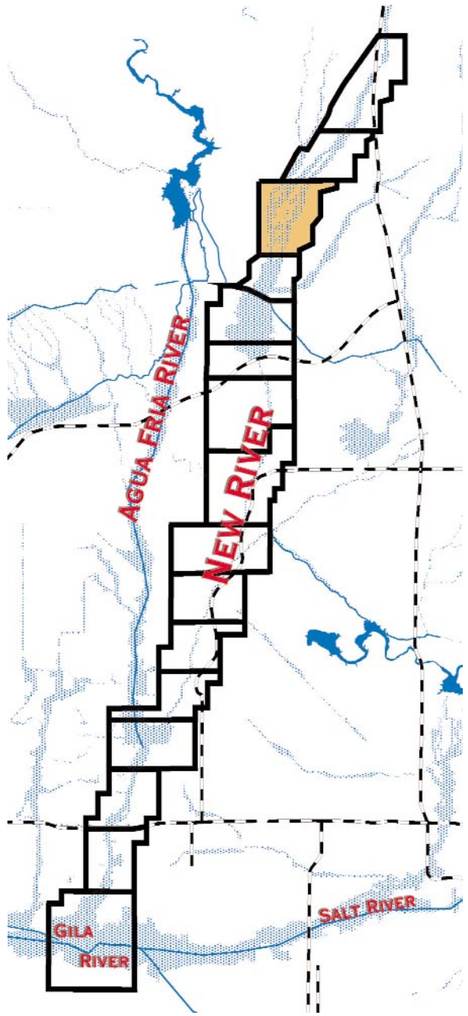
TRAIL SEGMENT N-3

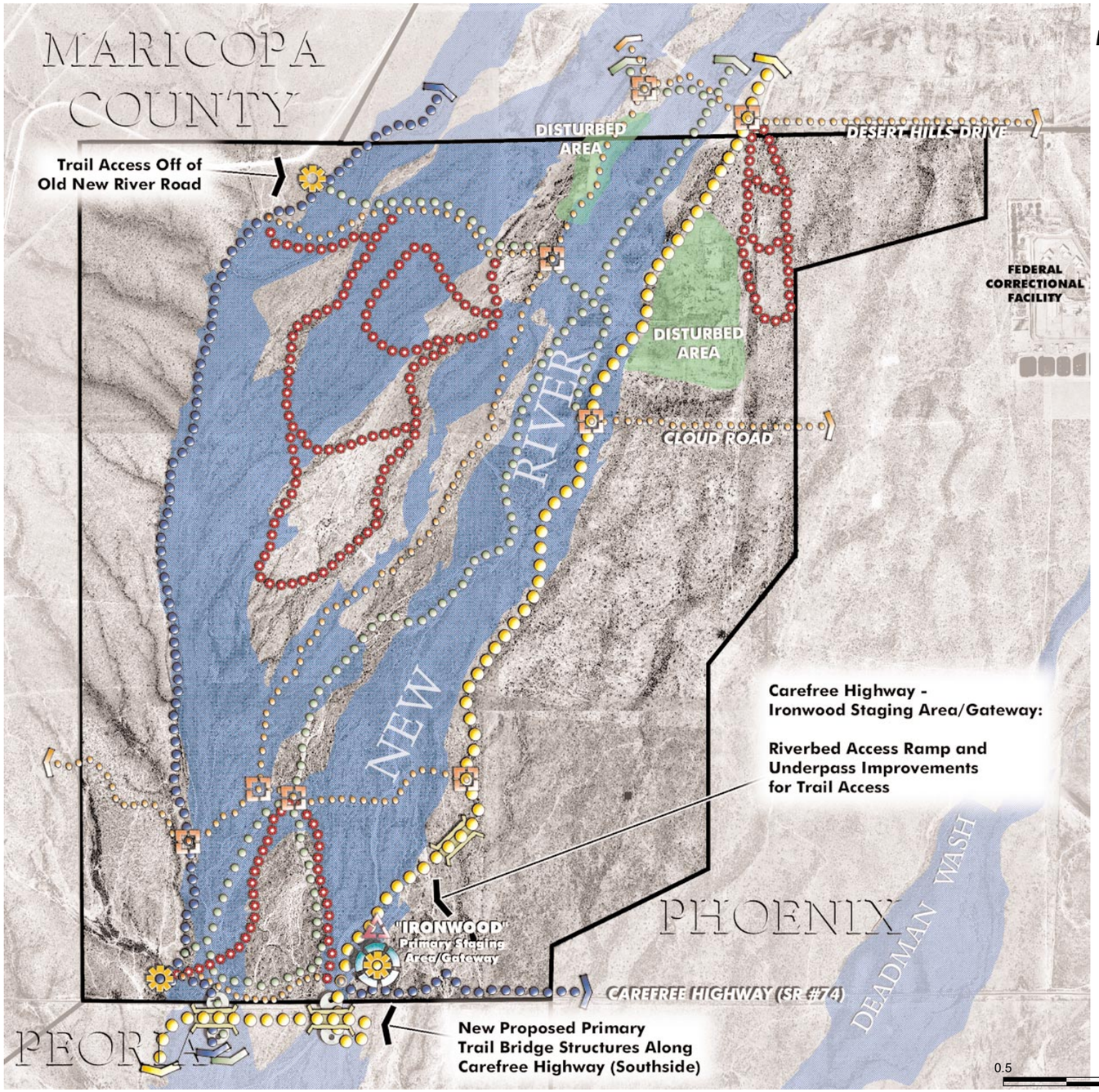
Desert Hills Drive to Carefree Highway (SR 74)

Affected Jurisdictions: Maricopa County, Phoenix, Arizona Department of Transportation, Peoria

Design Considerations:

- A primary trail will link the Ironwood primary staging area/gateway on the northeast of New River and Carefree Highway and an improved underpass at Carefree Highway on the east bank of the River. This underpass facility will also include a ramp up to the new prefabricated bridge structure that will cross the New River just south of Carefree Highway. There will be two bridge structures required to cross the two main channels of New River. At this point the primary trail will travel along the west bank of the New River downstream to the Central Arizona Project (CAP) intersection.
- The planned bridge structures at Carefree Highway should be designed to accommodate primary trail access with an underpass for bicycle and pedestrians. Adherence to Americans with Disabilities Act (ADA) and American Association of State Highway and Transportation Officials (AASHTO) design guidelines for trail design will be followed.
- Re-vegetation and riverbank reconstruction efforts designed to conserve the nature attributes of the River Corridor should be a primary consideration along both banks of the New River.
- Right-of-way access along Lake Pleasant Highway (located between the Maricopa County and Flood Control District jurisdiction properties) should be identified as a primary trail. This linkage to a preserved linear corridor, parallel to Lake Pleasant Highway, is an ideal non-motorized trail corridor.
- The designated primary trails in this area should be designed as universally accessible. The distance between the key staging areas at either end south of this trail segment to the CAP allows for a reasonable distance for a broad range of trail users to enjoy the desert environment. The grades are relatively flat which also allows for a trail opportunity for many different user groups. Adequate shade and protection from the elements will be required in this remote area of the trail. Signage for interpretive purposes and for trail safety will be important.
- Limited bank protection exists only at Carefree Highway (SR 74).
- Bank stabilization exists at the immediate bridge structure at Carefree Highway. Existing bridge may require modification to allow for primary trail underpass facilities and equestrian access ramps into the river channel.





MAP 11. TRAIL SEGMENT N-3 (NORTHERN REACH)

- PRIMARY TRAIL
- SECONDARY TRAIL
- NEIGHBORHOOD/TRANSIT CONNECTOR TRAIL
- CONSERVATION/INTERPRETIVE TRAIL
- EQUESTRIAN CORRIDOR
- ALTERNATE TRAIL ROUTE 'B'
- MAINTENANCE ROAD/PRIMARY TRAIL
- STUDY AREA BOUNDARY
- 100 YEAR FLOODPLAIN
- GATEWAY
- PRIMARY STAGING AREA/GATEWAY
- SECONDARY STAGING AREA
- TRAIL CONNECTION
- RIVERBED ACCESS RAMP
- FUTURE ROADWAY BRIDGE
- PREFABRICATED PEDESTRIAN BRIDGE
- TRANSIT CONNECTION NODE
- TRAIL UNDERPASS IMPROVEMENTS
- AT-GRADE PRIMARY TRAIL CROSSING

Trail Type	Width (Feet)	Distance (Linear Feet)	Distance (in Miles)	Material
Primary Trail	10-12	35,087	6.6	asphalt/concrete
Secondary Trail	8-10	46,777	8.9	decomposed granite
Neighborhood/Transit/Connector	8-10	7,565	1.4	asphalt/concrete
Conservation/Interpretive Trail	4-6	12,081	2.3	decomposed granite
Equestrian Corridor	4-6	20,119	3.8	sand/gravel

RIVER CHANNEL CROSS SECTION

Trail Amenities	Symbol	Quantity
Gateway		0
Primary Staging Area/Gateway		0
Secondary Staging Area		0
Trail Connection		5
Riverbed Access Ramp		0
Future Roadway Bridge		0
Prefabricated Pedestrian Bridge		7
Transit Connection Node		0
Trail Underpass Improvements		0
At-Grade Primary Trail Crossing		0

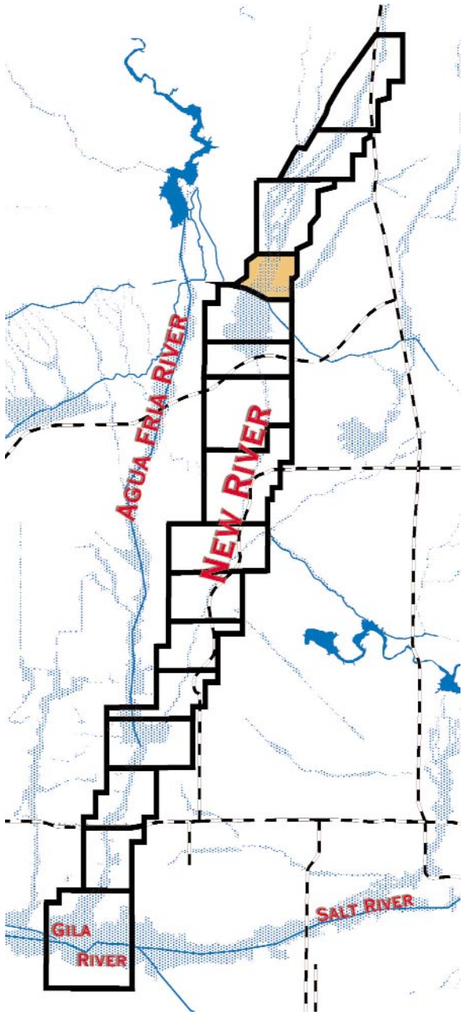
TRAIL SEGMENT N-4

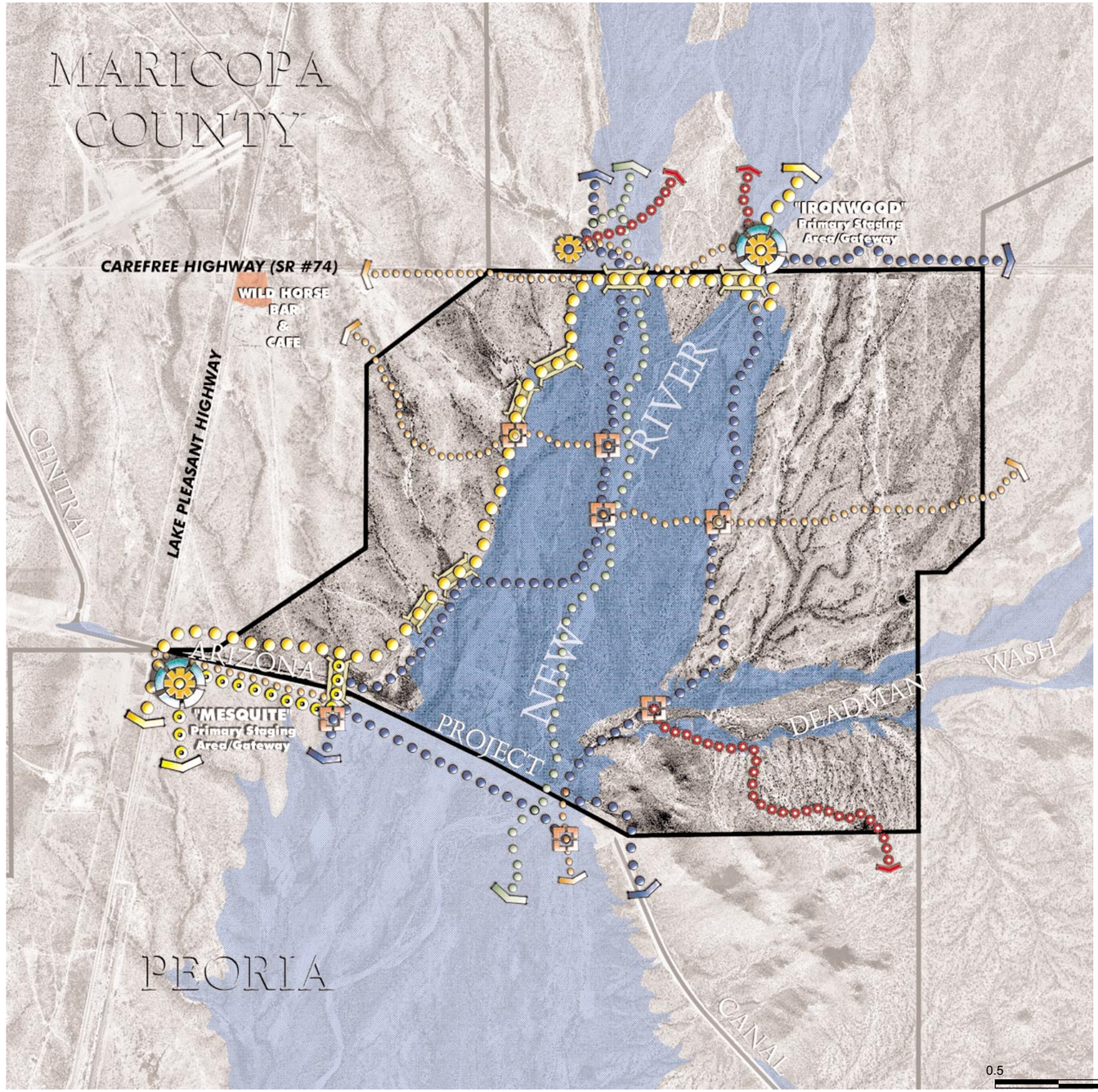
Carefree Highway to Central Arizona Project (CAP)

Affected Jurisdictions: Peoria, Phoenix, Central Arizona Project (CAP), Maricopa County, Arizona Department of Transportation (ADOT)

Design Considerations:

- A primary trail will be located on the west bank of the New River from Carefree Highway to the CAP/Lake Pleasant Highway– Mesquite Staging Area.
- A primary staging area/gateway is planned for the Lake Pleasant Highway/Central Arizona Project area along with primary and secondary trail linkages. A secondary trail link for hikers and mountain bikes will be located along the underground portion of the CAP to link planned secondary trails on the east bank of the New River.
- A secondary trail facility will be developed on the east-bank to accommodate pedestrians and bicyclists in the area. An equestrian route will be signed to be located in the New River channel with access to the primary staging area/gateway at Carefree Highway. This facility will also include a ramp access for equestrian purposes. These and other trail related amenities should be provided as a part of the development agreements with Maricopa County, Flood Control District of Maricopa County, Arizona Department of Transportation (ADOT), and the CAP management.
- Re-vegetation and riverbank reconstruction efforts designed to conserve the nature attributes of the River Corridor should be a primary consideration along both banks of the New River.
- Provide a trail linkage to the Wild Horse Bar & Cafe at Carefree Highway and Lake Pleasant Highway. Allow a recommended set back between Carefree Highway and the adjacent trail to link the primary trail and the restaurant.
- Provide future trail connectors to the primary trail system for remote areas located beyond the New River channel area.





MAP 12. TRAIL SEGMENT N-4 (NORTHERN REACH)

- PRIMARY TRAIL
- SECONDARY TRAIL
- NEIGHBORHOOD/TRANSIT CONNECTOR TRAIL
- CONSERVATION/INTERPRETIVE TRAIL
- EQUESTRIAN CORRIDOR
- ALTERNATE TRAIL ROUTE 'B'
- MAINTENANCE ROAD/PRIMARY TRAIL
- STUDY AREA BOUNDARY
- 100 YEAR FLOODPLAIN
- GATEWAY
- PRIMARY STAGING AREA/GATEWAY
- SECONDARY STAGING AREA
- TRAIL CONNECTION
- RIVERBED ACCESS RAMP
- FUTURE ROADWAY BRIDGE
- PREFABRICATED PEDESTRIAN BRIDGE
- TRANSIT CONNECTION NODE
- TRAIL UNDERPASS IMPROVEMENTS
- AT-GRADE PRIMARY TRAIL CROSSING

0.5 0 0.5 1 1.5 Miles

Trail Type	Width (Feet)	Distance (Linear Feet)	Distance (in Miles)	Material
Primary Trail	10-12	33,045	6.3	asphalt/concrete
Secondary Trail	8-10	50,316	9.5	decomposed granite
Neighborhood/Transit/Connector	8-10	21,360	4.0	asphalt/concrete
Conservation/Interpretive Trail	4-6	17,387	3.3	decomposed granite
Equestrian Corridor	4-6	47,630	9.0	sand/gravel

RIVER CHANNEL CROSS SECTION

Trail Amenities	Symbol	Quantity
Gateway		0
Primary Staging Area/Gateway		1
Secondary Staging Area		0
Trail Connection		8
Riverbed Access Ramp		0
Future Roadway Bridge		0
Prefabricated Pedestrian Bridge		1
Transit Connection Node		0
Trail Underpass Improvements		0
At-Grade Primary Trail Crossing		0

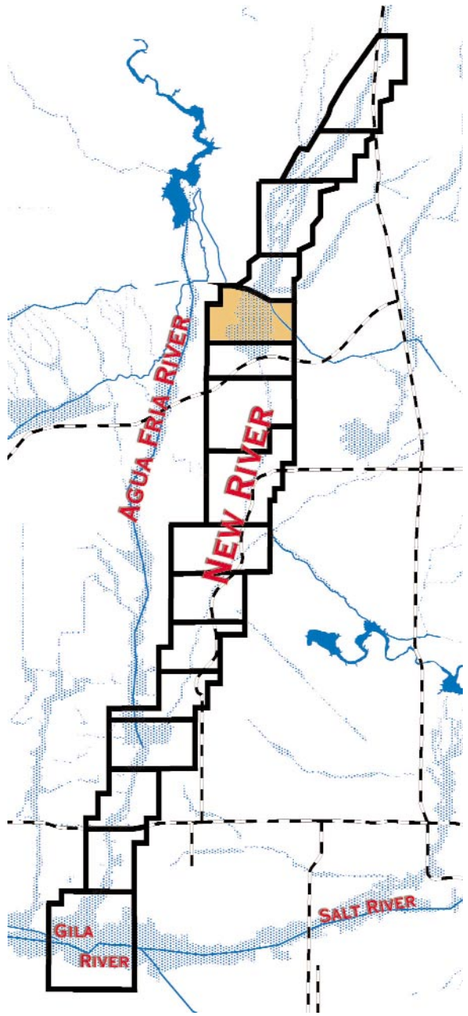
TRAIL SEGMENT N-5

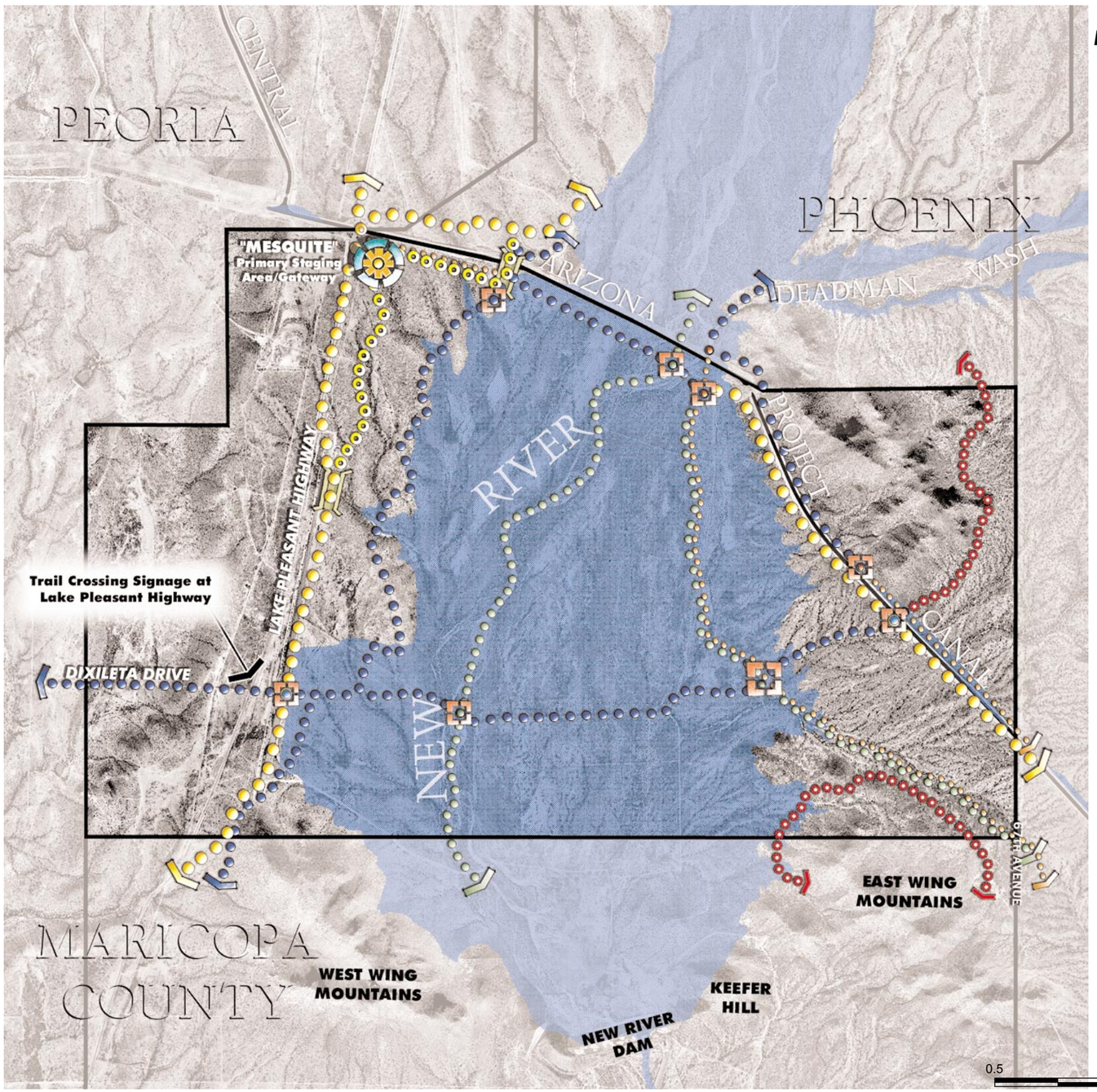
Central Arizona Project to Lake Pleasant Hwy/West Wing Mountain

Affected Jurisdictions: Central Arizona Project (CAP), Arizona Department of Transportation (ADOT), Maricopa County, Peoria, Phoenix

Design Considerations:

- A secondary trail facility will be developed along the west bank of the New River to accommodate pedestrians and bicyclists in the area. An equestrian route will be signed to be located in the New River Channel with access to the Mesquite primary staging area/gateway at the Central Arizona Project (CAP). These and other trail related amenities should be provided as a part of the development agreements with Maricopa County, Flood Control District of Maricopa County, Arizona Department of Transportation (ADOT), and the CAP management.
- Re-vegetation and riverbank reconstruction efforts designed to conserve the natural attributes of the River Corridor should be a primary consideration along both banks of the New River.
- Right-of-way access along Lake Pleasant Highway (located between the Maricopa County and Flood Control District jurisdiction properties) should be identified as a primary trail. This linkage to a preserved linear corridor, parallel to Lake Pleasant Highway is an ideal non-motorized urban trail corridor. A bridge or ramp access over the CAP canal will be required to link to the Lake Pleasant Highway corridor.
- A primary staging area/gateway area is planned for the Lake Pleasant Highway/CAP area along with primary and secondary trail linkages. A secondary trail link for pedestrians and bicyclists will be located along the underground portion of the CAP to link planned secondary trails on the east bank of the New River.
- A primary trail facility will be located east of Lake Pleasant Highway and the New River Channel. Provide a trail easement for a set-back between Lake Pleasant Highway and the trail facility.
- Key constraint will be in obtaining trail access rights at the CAP and with Maricopa County Department of Transportation along Lake Pleasant Highway.
- Trail access and right-of-way issues will require full coordination between Maricopa County Department of Transportation (MCDOT) and FCDMC in order to link each staging area.





MAP 13. TRAIL SEGMENT N-5 (NORTHERN REACH)

- PRIMARY TRAIL
- SECONDARY TRAIL
- NEIGHBORHOOD/TRANSIT CONNECTOR TRAIL
- CONSERVATION/INTERPRETIVE TRAIL
- EQUESTRIAN CORRIDOR
- ALTERNATE TRAIL ROUTE 'B'
- MAINTENANCE ROAD/PRIMARY TRAIL
- STUDY AREA BOUNDARY
- 100 YEAR FLOODPLAIN
- GATEWAY
- PRIMARY STAGING AREA/GATEWAY
- SECONDARY STAGING AREA
- TRAIL CONNECTION
- RIVERBED ACCESS RAMP
- FUTURE ROADWAY BRIDGE
- PREFABRICATED PEDESTRIAN BRIDGE
- TRANSIT CONNECTION NODE
- TRAIL UNDERPASS IMPROVEMENTS
- AT-GRADE PRIMARY TRAIL CROSSING

Trail Type	Width (Feet)	Distance (Linear Feet)	Distance (in Miles)	Material
Primary Trail	10-12	18,716	3.5	asphalt/concrete
Secondary Trail	8-10	56,078	10.6	decomposed granite
Neighborhood/Transit/Connector	8-10	5,525	1.0	asphalt/concrete
Conservation/Interpretive Trail	4-6	30,582	5.8	decomposed granite
Equestrian Corridor	4-6	32,961	6.2	sand/gravel

RIVER CHANNEL CROSS SECTION

Trail Amenities	Symbol	Quantity
Gateway		2
Primary Staging Area/Gateway		0
Secondary Staging Area		1
Trail Connection		5
Riverbed Access Ramp		0
Future Roadway Bridge		0
Prefabricated Pedestrian Bridge		4
Transit Connection Node		0
Trail Underpass Improvements		1
At-Grade Primary Trail Crossing		1

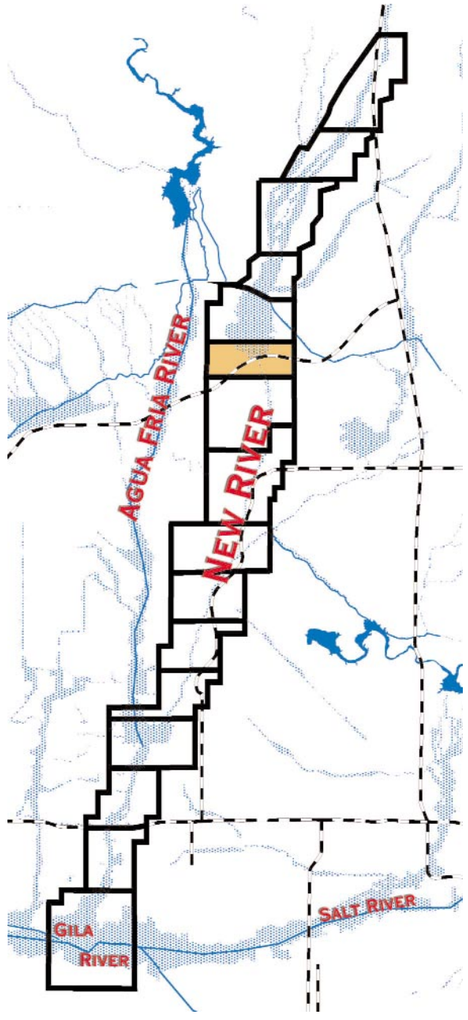
TRAIL SEGMENT N-6

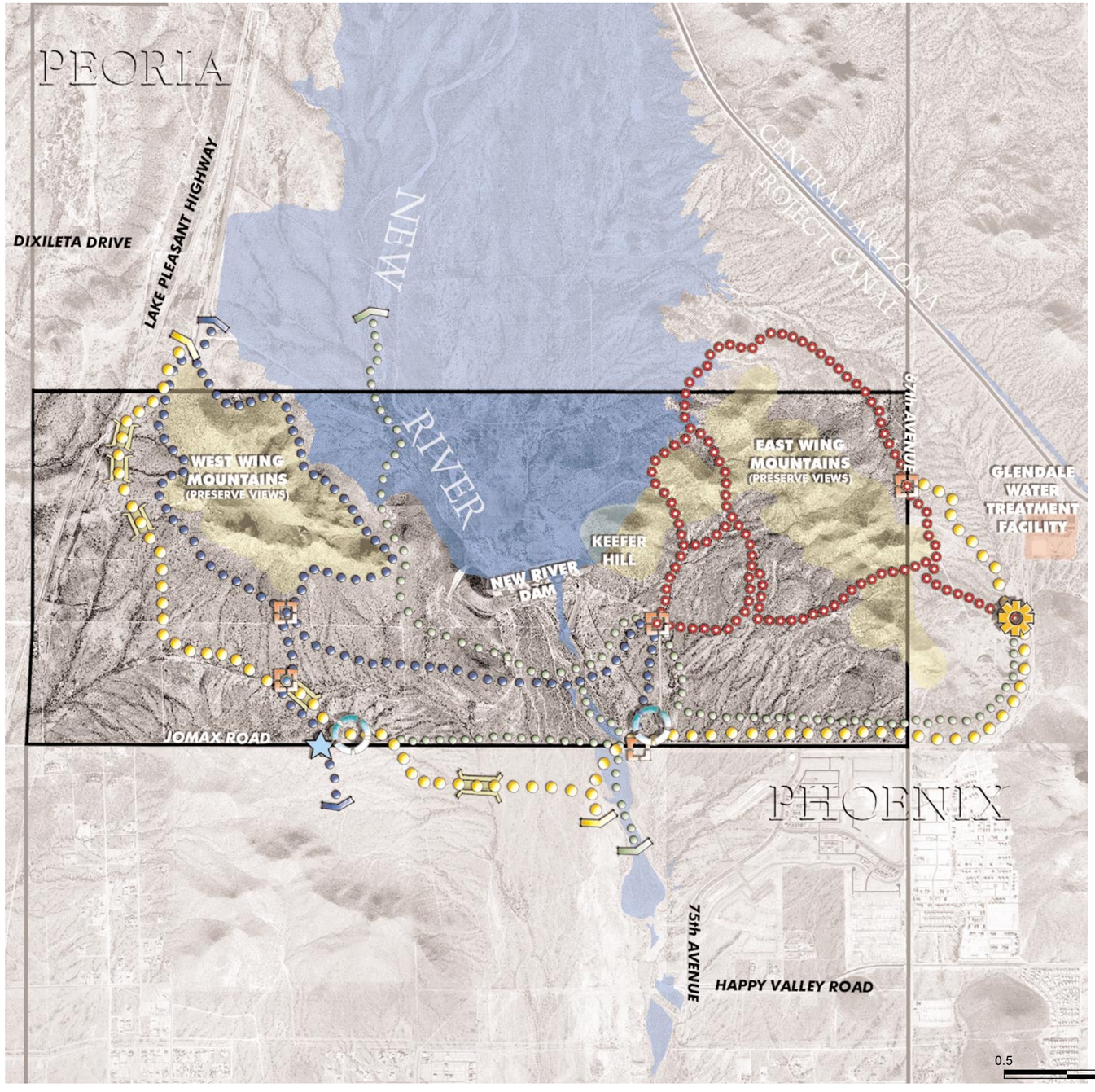
Lake Pleasant Highway/West Wing Mountain to Jomax Road

Affected Jurisdictions: Peoria, Phoenix

Design Considerations:

- The planned roadway improvements for Jomax Road and New River should be designed to accommodate primary trail access with at-grade trail crossing facilities and a pre-fabricated bridge structure for bicycle and pedestrian use. Adherence to American Association of State Highway and Transportation Officials (AASHTO) design guidelines for trail design will be followed.
- A secondary trail facility will be developed on the west side of the West Wing Mountains. The secondary trail will follow Jomax Road to the west around West Wing Mountain to provide pedestrian and bicyclist access around the mountain and New River Dam structure. Other connector trails will be developed around the East Wing Mountains. As the most accessible area to the urban area, this important transition area must accommodate all trail users in a well-managed system of trails.
- An equestrian route will be signed to be located in the New River Channel with access to the secondary staging area at Jomax Road and the Glendale Wastewater Facility. These and other trail related amenities should be provided as a part of the development agreements with Maricopa County, Flood Control District of Maricopa County, local jurisdictions, and private landowners.
- Right-of-way access along the base of West Wing Mountains (located within private property and Maricopa County Department of Transportation right-of-way) should be identified as a primary trail. This linkage will provide access to a preserved linear corridor, parallel to link to Lake Pleasant Highway. Private land ownership from Jomax Road north and west to Lake Pleasant Highway will be a consideration.
- Provide future neighborhood access to the primary trail system for those residential areas located south of New River Dam. Existing neighborhood on-street bike routes and side paths within the neighborhoods should be connected to the primary trail to encourage interconnections and avoidance of higher traffic volume streets in the metropolitan area.
- Jomax Road roadway widening plans and potential bridge crossing at New River will also need to be verified. Any future roadway projects along Jomax Road should plan to include accommodations for a primary trail facility along the north side of the corridor for the New River trail improvements.



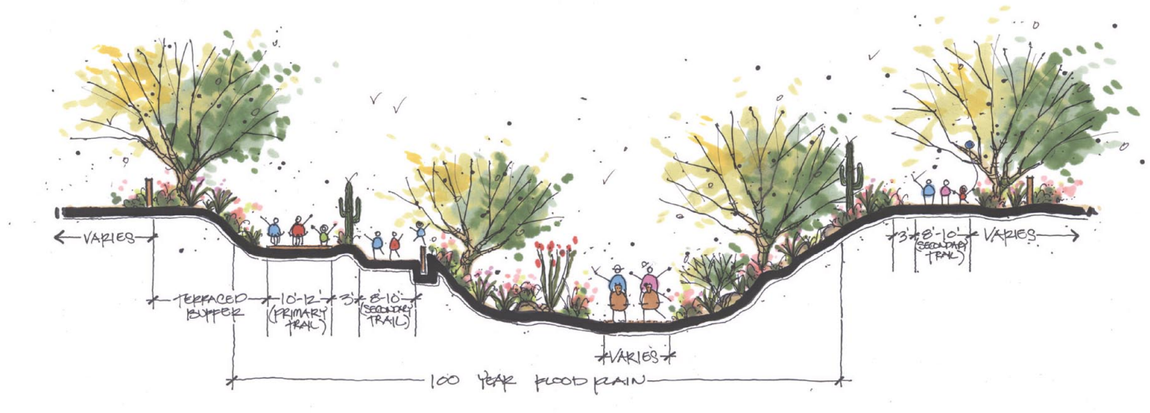


MAP 14. TRAIL SEGMENT N-6 (NORTHERN REACH)

- PRIMARY TRAIL
- SECONDARY TRAIL
- NEIGHBORHOOD/TRANSIT CONNECTOR TRAIL
- CONSERVATION/INTERPRETIVE TRAIL
- EQUESTRIAN CORRIDOR
- ALTERNATE TRAIL ROUTE 'B'
- MAINTENANCE ROAD/PRIMARY TRAIL
- STUDY AREA BOUNDARY
- 100 YEAR FLOODPLAIN
- GATEWAY
- PRIMARY STAGING AREA/GATEWAY
- SECONDARY STAGING AREA
- TRAIL CONNECTION
- RIVERBED ACCESS RAMP
- FUTURE ROADWAY BRIDGE
- PREFABRICATED PEDESTRIAN BRIDGE
- TRANSIT CONNECTION NODE
- TRAIL UNDERPASS IMPROVEMENTS
- AT-GRADE PRIMARY TRAIL CROSSING

0.5 0 0.5 1 1.5 Miles

Trail Type	Width (Feet)	Distance (Linear Feet)	Distance (in Miles)	Material
Primary Trail	10-12	25,365	4.8	asphalt/concrete
Secondary Trail	8-10	32,753	6.2	decomposed granite
Neighborhood/Transit/Connector	8-10	44,584	8.4	asphalt/concrete
Conservation/Interpretive Trail	4-6	0	0.0	decomposed granite
Equestrian Corridor	4-6	17,126	3.2	sand/gravel



RIVER CHANNEL CROSS SECTION

Trail Amenities	Symbol	Quantity
Gateway		4
Primary Staging Area/Gateway		1
Secondary Staging Area		0
Trail Connection		6
Riverbed Access Ramp		2
Future Roadway Bridge		2
Prefabricated Pedestrian Bridge		1
Transit Connection Node		0
Trail Underpass Improvements		2
At-Grade Primary Trail Crossing		1

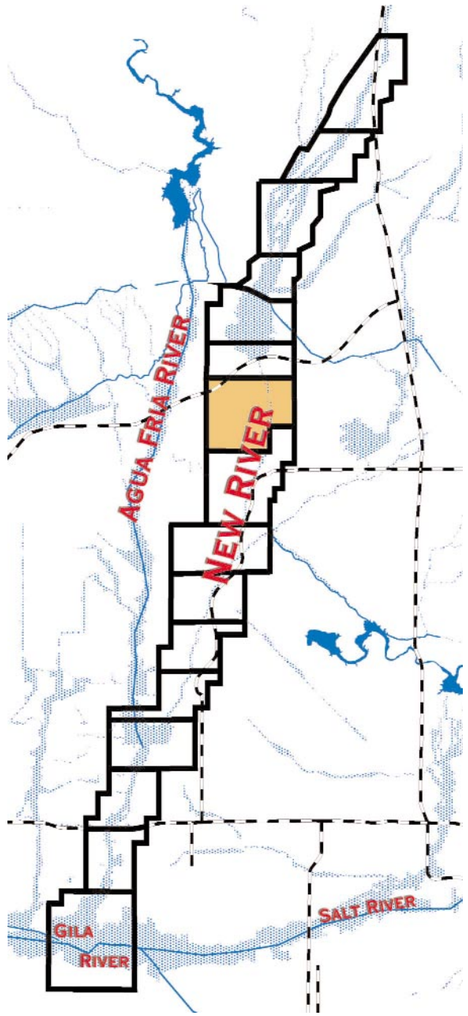
TRAIL SEGMENT C-7

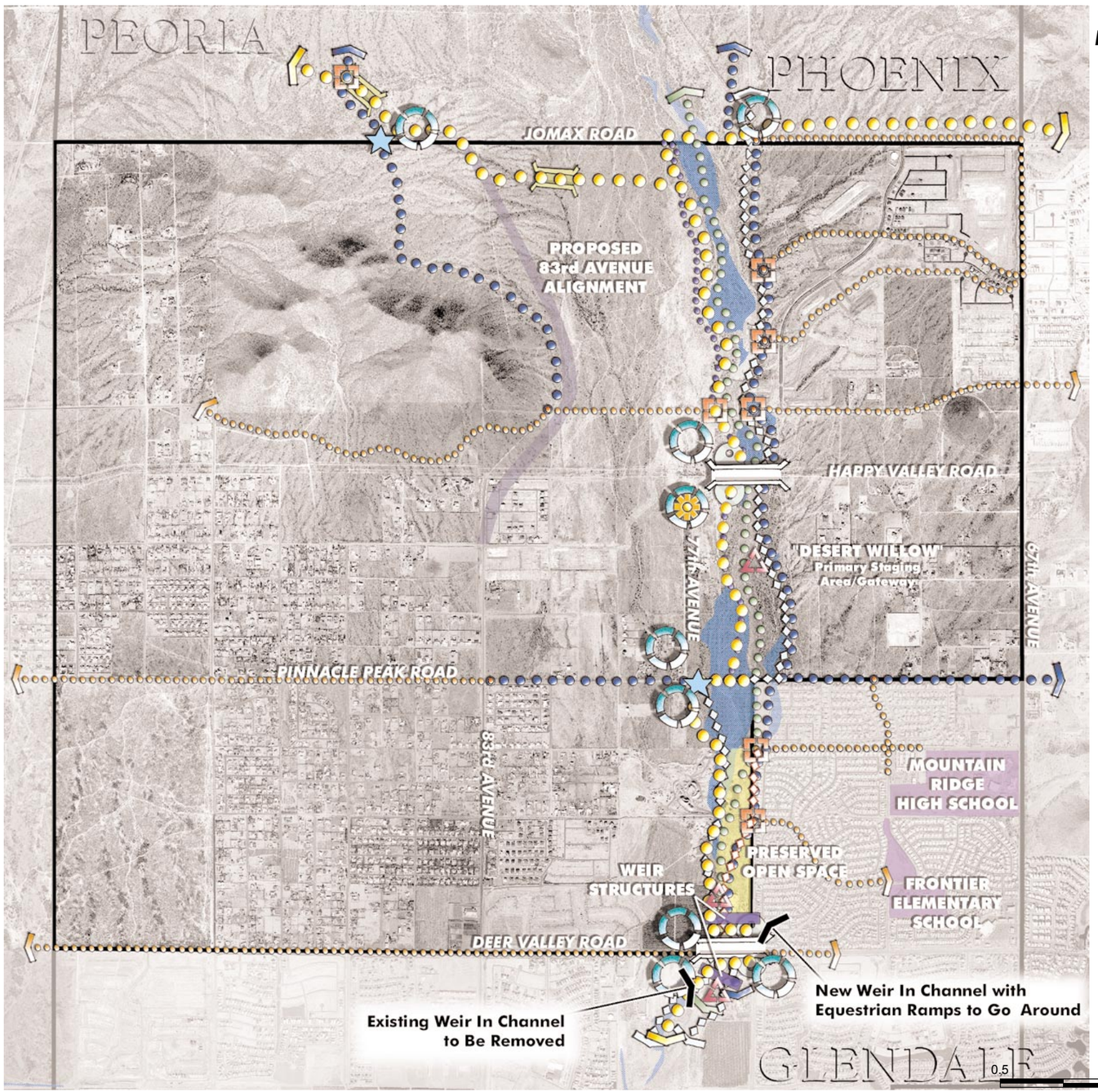
Jomax Road to Pinnacle Peak/Deer Valley Road

Affected Jurisdictions: Peoria, Phoenix, Glendale

Design Considerations:

- An existing sand and gravel operation at Deer Valley Road and New River will impact the planned primary trail facilities for both banks of the New River. This existing operation will require specific plan strategies to accommodate the needs of the mining operations and trail connections in the area. Long-term considerations may include allowing temporary access agreements until the mining operation is closed and/or relocated permanently. At that time, these areas should be reclaimed by FCDMC with planned river parks, revegetation and river restoration efforts.
- The Deer Valley Road intersection at New River is congested and impacted by commercial trucks accessing the sand and gravel operation. This location is complicated with an existing weir located in channel in the New River just downstream from Deer Valley Road. This area will require further feasibility assessments to define trail connections.
- Interim at-grade, trail crossing facilities and long-term underpass or bridge structures at Deer Valley Road or Pinnacle Peak will be designed to accommodate primary trail access for bicycle, pedestrian, and equestrian access. Adherence to AASHTO design guidelines for trail design will be followed.
- Re-vegetation and riverbank reconstruction efforts designed to conserve the natural attributes of the River Corridor should be a primary consideration along both banks of the New River, specifically along areas impacted by sand and gravel mining operations.
- Right-of-way access at major arterial streets along the New River should be recognized as gateway features to identify the West Valley Multi-Modal Transportation Corridor.
- A future primary staging area/gateway and neighborhood access points are planned for the "Desert Willow" Happy Valley Road.
- Provide future neighborhood access to the primary trail system for those residential areas located south of New River Dam. Existing neighborhood on-street bike routes and side paths within the neighborhoods should be connected to the primary trail to encourage interconnections and avoidance of higher traffic volume streets in the metropolitan area.
- Future roadway improvements at Deer Valley Road should include short-term at-grade crossing improvements at signalized intersections to accommodate primary trail users along the New River. Long term primary trail improvements at this river location will include a new roadway bridge to accommodate trail underpass improvements and access at the street location for pedestrians, bicyclists, and other trail users.





MAP 15. TRAIL SEGMENT C-7 (CENTRAL REACH)

- PRIMARY TRAIL
- SECONDARY TRAIL
- NEIGHBORHOOD/TRANSIT CONNECTOR TRAIL
- CONSERVATION/INTERPRETIVE TRAIL
- EQUESTRIAN CORRIDOR
- ALTERNATE TRAIL ROUTE 'B'
- MAINTENANCE ROAD/PRIMARY TRAIL
- STUDY AREA BOUNDARY
- 100 YEAR FLOODPLAIN
- GATEWAY
- PRIMARY STAGING AREA/GATEWAY
- SECONDARY STAGING AREA
- TRAIL CONNECTION
- RIVERBED ACCESS RAMP
- FUTURE ROADWAY BRIDGE
- PREFABRICATED PEDESTRIAN BRIDGE
- TRANSIT CONNECTION NODE
- TRAIL UNDERPASS IMPROVEMENTS
- AT-GRADE PRIMARY TRAIL CROSSING

Trail Type	Width (Feet)	Distance (Linear Feet)	Distance (in Miles)	Material
Primary Trail	10-12	47,853	9.1	asphalt/concrete
Secondary Trail	8-10	21,035	4.0	decomposed granite
Neighborhood/Transit/Connector	8-10	81,919	15.5	asphalt/concrete
Conservation/Interpretive Trail	4-6	0	0.0	decomposed granite
Equestrian Corridor	4-6	23,200	4.4	sand/gravel

RIVER CHANNEL CROSS SECTION

Trail Amenities	Symbol	Quantity
Gateway		7
Primary Staging Area/Gateway		1
Secondary Staging Area		0
Trail Connection		2
Riverbed Access Ramp		2
Future Roadway Bridge		1
Prefabricated Pedestrian Bridge		2
Transit Connection Node		3
Trail Underpass Improvements		2
At-Grade Primary Trail Crossing		0

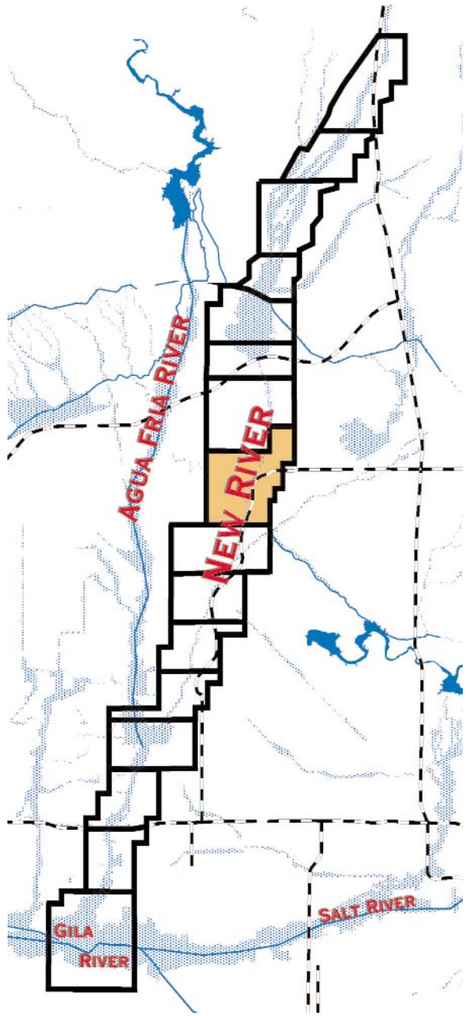
TRAIL SEGMENT C-8

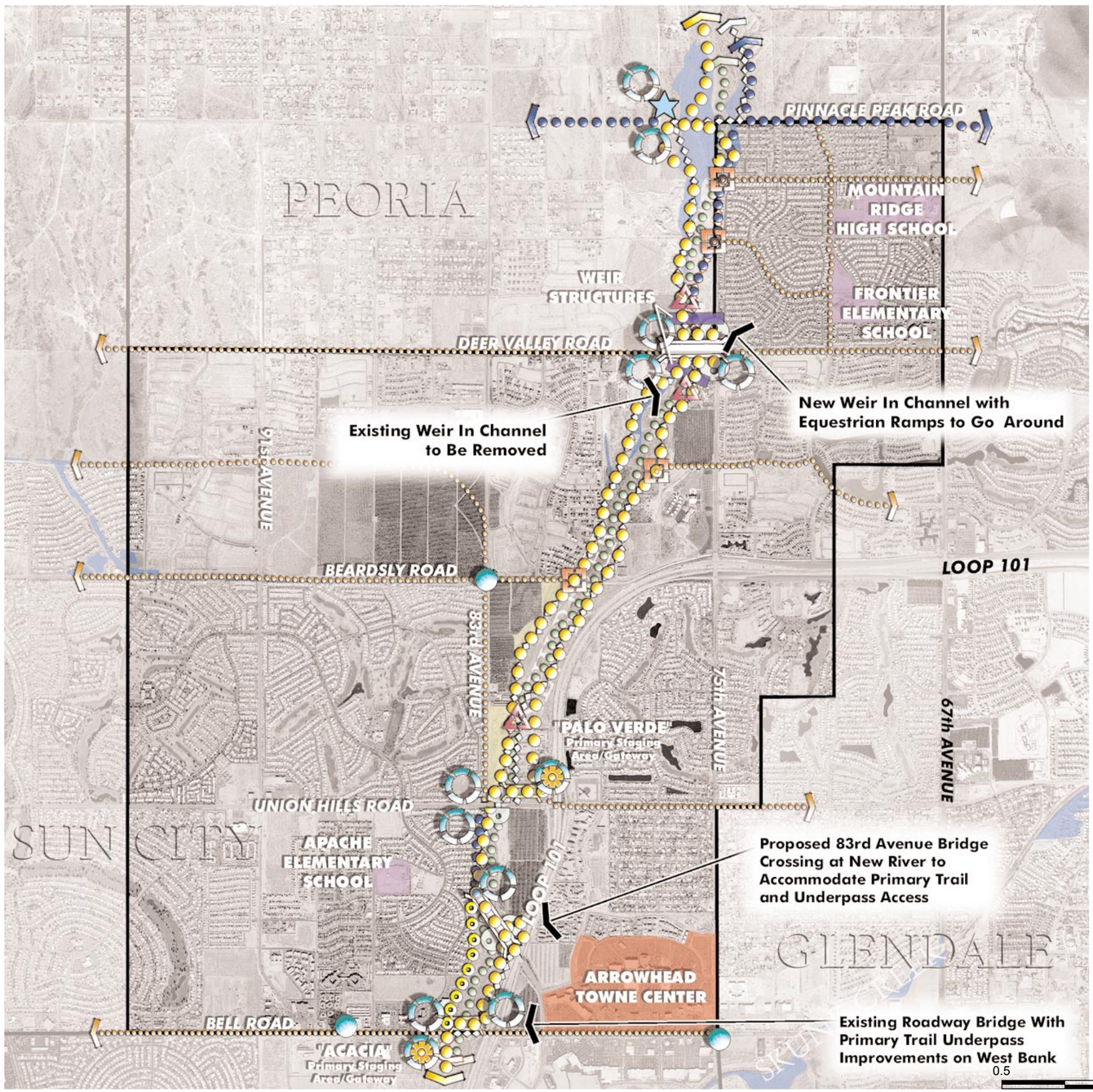
Pinnacle Peak/Deer Valley Road to Bell Road

Affected Jurisdictions: Peoria, Glendale

Design Considerations:

- Primary trail will be located on both banks of the New River from Deer Valley Road to Union Hills Road.
- Re-vegetation and riverbank reconstruction efforts designed to enhance the New River Corridor are a primary consideration along both banks of the New River.
- A range of opportunities exist to enhance large linear tracks of land adjacent to the New River as a result of subdivision development and Interstate 101 Loop construction. These tracks of lands should be studied as potential linear parks, both active and passive use space to complement the planned trail system.
- Provide future neighborhood access to primary trail system for residential areas south of Pinnacle Peak Road. Existing neighborhood on-street bike routes and side paths linking to public transit stops within the neighborhoods should be connected to the primary trail to encourage interconnections and avoidance of higher traffic volume streets.
- The proposed 83rd Avenue corridor re-alignment improvements will affect the New River Trail Corridor. Currently, the at-grade crossing of 83rd Avenue and the New River cannot safely accommodate trail users. This future roadway project must recognize and accommodate the primary trail improvements including bridge/trail enhancements for bicyclist and pedestrians, and underpass facility on the east bank and gateway treatments.
- The primary trail will cross over to the west bank at Union Hills Road and continue south on the west bank only from Union Hills Road to the new 83rd Avenue Bridge then along the east bank to Bell Road. The Union Hills Road Bridge at New River will require modifications to safely accommodate bicycle and pedestrian travel across the bridge, or a new structural bridge may be required adjacent to the existing Union Hills Road Bridge. A new underpass located on the west bank will be required for the Primary Trail under Union Hills Road.
- New bridge crossings at New River and 83rd Avenue will require new bank stabilization.
- Beardsley Road and the New River may also see future roadway improvements. New bank stabilization will be required in this area if new roadway/bridge improvements are programmed for design and construction at this location. If a new bridge structure is considered for Beardsley Road and New River, primary trail accommodations on the bridge and new underpasses at both banks should be considered.





MAP 16. TRAIL SEGMENT C-8 (CENTRAL REACH)

- PRIMARY TRAIL
- SECONDARY TRAIL
- NEIGHBORHOOD/TRANSIT CONNECTOR TRAIL
- CONSERVATION/INTERPRETIVE TRAIL
- EQUESTRIAN CORRIDOR
- ALTERNATE TRAIL ROUTE 'B'
- MAINTENANCE ROAD/PRIMARY TRAIL
- STUDY AREA BOUNDARY
- 100 YEAR FLOODPLAIN
- GATEWAY
- PRIMARY STAGING AREA/GATEWAY
- SECONDARY STAGING AREA
- TRAIL CONNECTION
- RIVERBED ACCESS RAMP
- FUTURE ROADWAY BRIDGE
- PREFABRICATED PEDESTRIAN BRIDGE
- TRANSIT CONNECTION NODE
- TRAIL UNDERPASS IMPROVEMENTS
- AT-GRADE PRIMARY TRAIL CROSSING

Trail Type	Width (Feet)	Distance (Linear Feet)	Distance (in Miles)	Material
Primary Trail	10-12	25,755	4.9	asphalt/concrete
Secondary Trail	8-10	23,611	4.5	decomposed granite
Neighborhood/Transit/Connector	8-10	14,949	2.8	asphalt/concrete
Conservation/Interpretive Trail	4-6	0	0.0	decomposed granite
Equestrian Corridor	4-6	32,938	6.2	sand/gravel

RIVER CHANNEL CROSS SECTION

Trail Amenities	Symbol	Quantity
Gateway		1
Primary Staging Area/Gateway		2
Secondary Staging Area		0
Trail Connection		5
Riverbed Access Ramp		2
Future Roadway Bridge		0
Prefabricated Pedestrian Bridge		2
Transit Connection Node		2
Trail Underpass Improvements		1
At-Grade Primary Trail Crossing		0

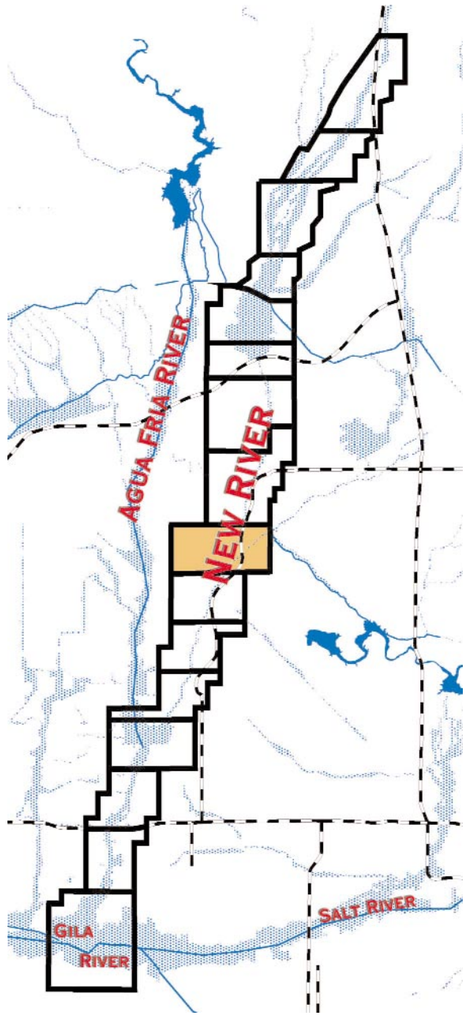
TRAIL SEGMENT C-9

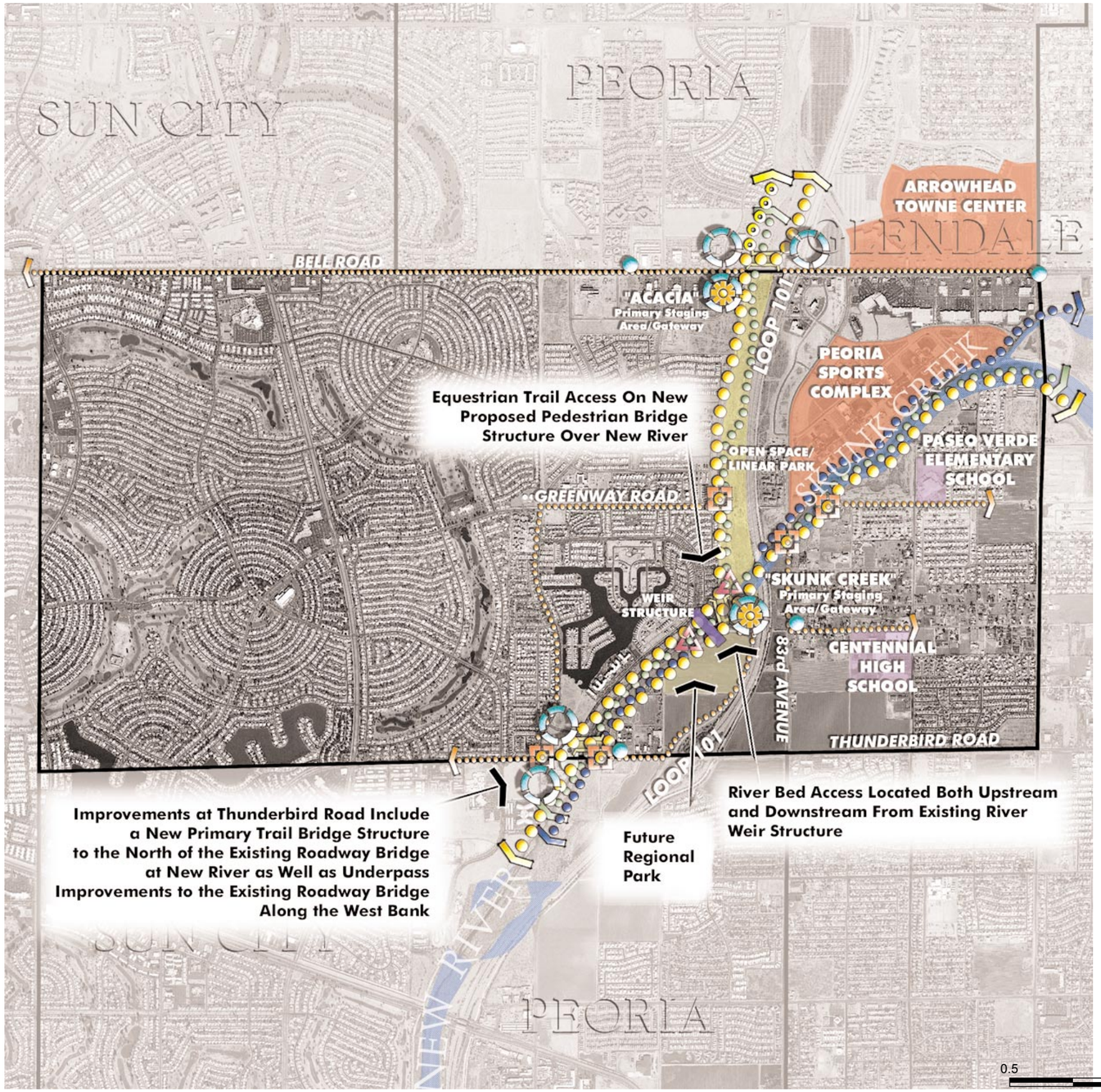
Bell Road to Thunderbird Road

Affected Jurisdictions: Maricopa County, Peoria

Design Considerations:

- A series of open spaces along the east bank, from Bell Road to the Skunk Creek, is set-aside as passive open space and river restoration and landscape improvements. Secondary trail or connector trail improvements can be included in the open landscape areas.
- An equestrian route located in the channel will provide continuous facilities for equestrian needs. Below the confluence of Skunk Creek is a major weir structure in-channel that will require modification or riverbed access ramps, both upstream and downstream of the structure, to accommodate equestrians. The weir structure will provide an equestrian ramp to allow users to move up and down stream without barriers.
- Informal secondary trail facilities located adjacent to the primary trail, will be developed throughout Trail Segment C-9 to accommodate pedestrians and bicyclists in the area.
- Re-vegetation and riverbank reconstruction efforts designed to conserve the natural attributes of the Corridor should be a primary consideration along both banks of the New River.
- Existing neighborhood on-street bike routes and side paths within the neighborhoods should be connected to the primary trail to encourage interconnections and avoidance of higher traffic volume streets.
- Bank stabilization, primarily soil cement structures, exist along the entire length of the trail segment.
- Confluence of Skunk Creek and New River has very high banks to accommodate 100 - year events and stormwater from both drainage channels. Existing soil cement bank protected areas will require modification at Thunderbird Road for a new underpass.
- Proposed pre-fabricated primary trail bridge structure downstream from the Skunk Creek confluence will require modifications to existing channel bank protection. This bridge structure will provide trail access to Skunk Creek, Sun Circle Trail, and other locations.
- The Peoria Sports Complex lies adjacent to the New River channel area, at the Skunk Creek confluence. A new bicycle/pedestrian bridge at the Skunk Creek should allow primary trail access to and from the Peoria Sports Complex, as well as access to the Sun Circle Trail upstream and any other existing urban trails along the canal system.
- A proposed "Skunk Creek" Primary staging/gateway area is proposed on the east bank of the New River – between the New River and the Loop 101 Freeway.

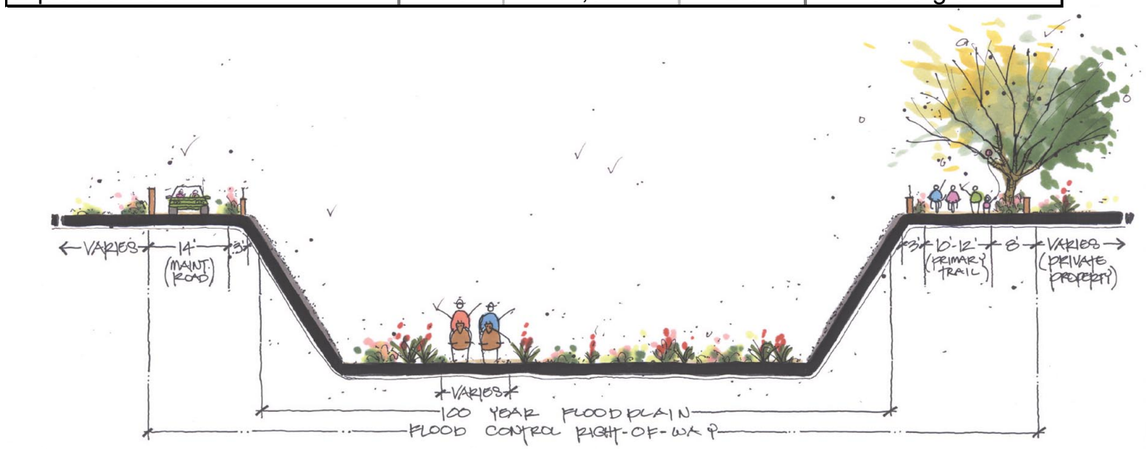




MAP 17. TRAIL SEGMENT C-9 (CENTRAL REACH)

- PRIMARY TRAIL
- SECONDARY TRAIL
- NEIGHBORHOOD/TRANSIT CONNECTOR TRAIL
- CONSERVATION/INTERPRETIVE TRAIL
- EQUESTRIAN CORRIDOR
- ALTERNATE TRAIL ROUTE 'B'
- MAINTENANCE ROAD/PRIMARY TRAIL
- STUDY AREA BOUNDARY
- 100 YEAR FLOODPLAIN
- GATEWAY
- PRIMARY STAGING AREA/GATEWAY
- SECONDARY STAGING AREA
- TRAIL CONNECTION
- RIVERBED ACCESS RAMP
- FUTURE ROADWAY BRIDGE
- PREFABRICATED PEDESTRIAN BRIDGE
- TRANSIT CONNECTION NODE
- TRAIL UNDERPASS IMPROVEMENTS
- AT-GRADE PRIMARY TRAIL CROSSING

Trail Type	Width (Feet)	Distance (Linear Feet)	Distance (in Miles)	Material
Primary Trail	10-12	20,949	4.0	asphalt/concrete
Secondary Trail	8-10	28,215	5.3	decomposed granite
Neighborhood/Transit/Connector	8-10	18,450	3.5	asphalt/concrete
Conservation/Interpretive Trail	4-6	0	0.0	decomposed granite
Equestrian Corridor	4-6	11,971	2.3	sand/gravel



RIVER CHANNEL CROSS SECTION

Trail Amenities	Symbol	Quantity
Gateway		2
Primary Staging Area/Gateway		0
Secondary Staging Area		0
Trail Connection		2
Riverbed Access Ramp		0
Future Roadway Bridge		0
Prfabricated Pedestrian Bridge		0
Transit Connection Node		3
Trail Underpass Improvements		2
At-Grade Primary Trail Crossing		0

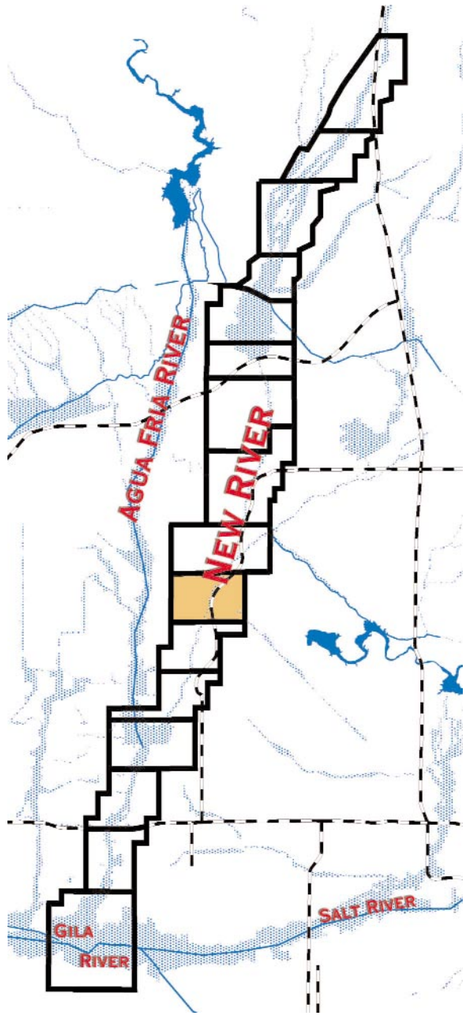
TRAIL SEGMENT C-10

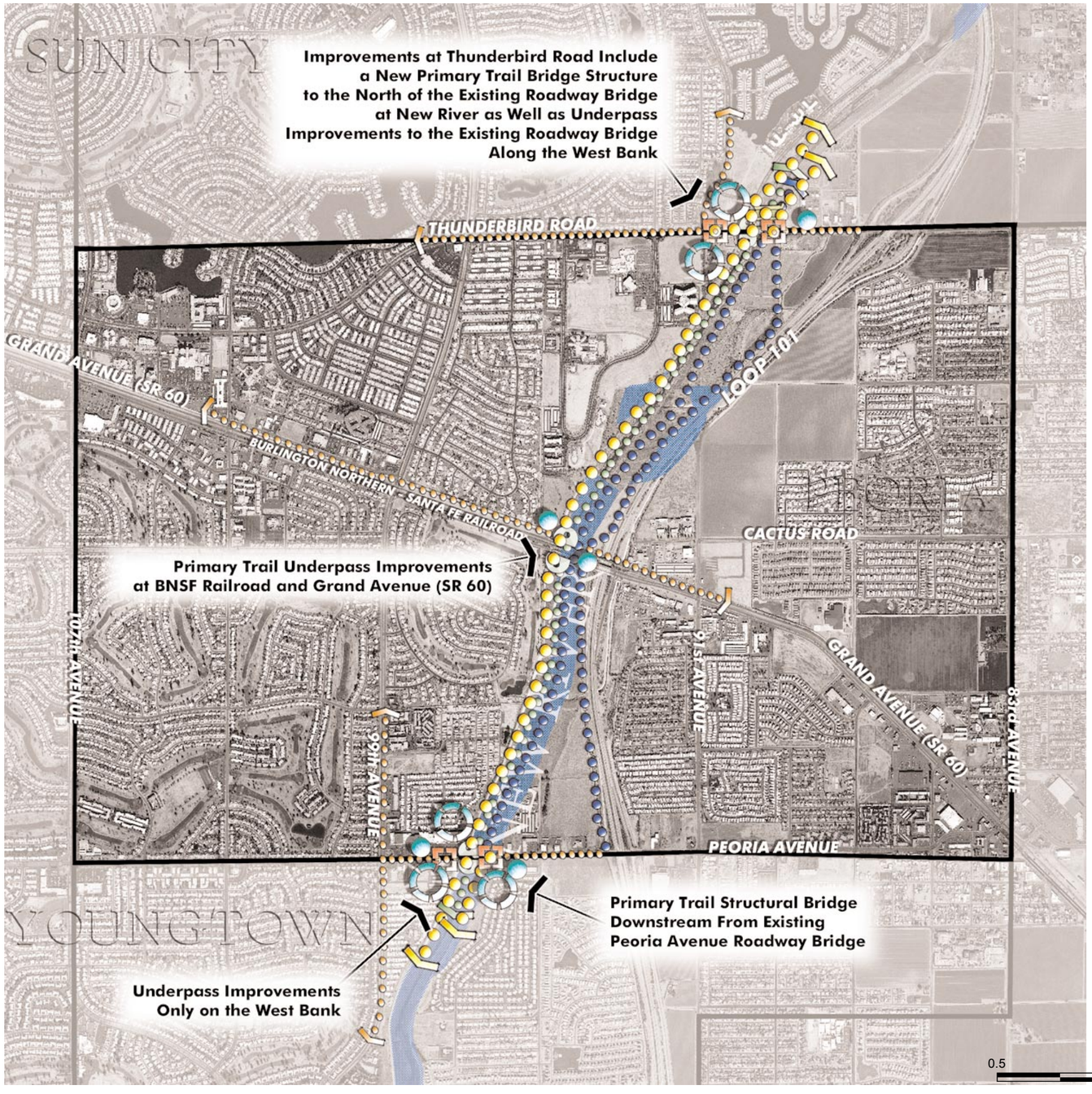
Thunderbird Road to Peoria Ave.

Affected Jurisdictions: Maricopa County, Peoria, Burlington Northern-Santa Fe Railroad, Arizona Department of Transportation (ADOT)

Design Considerations:

- Primary trail facilities will be located along the west bank of New River. Secondary trail facilities located adjacent to the Primary Trail, will be developed along the east bank to accommodate pedestrians and bicyclists in the area.
- New primary trail underpass planned for the west bank at Grand Avenue/SR 60 and the Burlington Northern Santa Fe Railroad. These planned underpasses will increase safety for trail users and provide uninterrupted flows on the trail system. Existing soil cement bank protected areas will require modification at Thunderbird Road, Peoria Avenue, the Burlington Northern Santa Fe Railroad and Grand Avenue/SR 60 bridge structures for proposed new underpasses.
- Re-vegetation and riverbank reconstruction efforts designed to conserve the natural attributes of the River Corridor should be a primary consideration along both banks of the New River. Before further development continues in this area a dedicated trail easement of 50-150 feet should be established to protect and preserve the primary trail.
- Provide future neighborhood access to the primary trail for those residential areas south of the New River Dam. Existing neighborhood on-street bike routes and side paths within the neighborhoods should be connected to the primary trail to encourage interconnections and avoidance of higher traffic volume street.
- Land between Loop 101 and the New River offers many opportunities for open space recreation areas that may serve as linkages to the proposed trail system.
- Retrofitting existing bridge structures into below-grade crossings at Thunderbird Road, Peoria Avenue, Grand Avenue/SR 60 and the Burlington Northern Santa Fe Railroad will increase safety for trail users and provide uninterrupted flows on the trail system.
- An equestrian route located in the channel will provide continuous facilities for equestrian needs.





MAP 18. TRAIL SEGMENT C-10 (CENTRAL REACH)

- PRIMARY TRAIL
- SECONDARY TRAIL
- NEIGHBORHOOD/TRANSIT CONNECTOR TRAIL
- CONSERVATION/INTERPRETIVE TRAIL
- EQUESTRIAN CORRIDOR
- ALTERNATE TRAIL ROUTE 'B'
- MAINTENANCE ROAD/PRIMARY TRAIL
- STUDY AREA BOUNDARY
- 100 YEAR FLOODPLAIN
- GATEWAY
- PRIMARY STAGING AREA/GATEWAY
- SECONDARY STAGING AREA
- TRAIL CONNECTION
- RIVERBED ACCESS RAMP
- FUTURE ROADWAY BRIDGE
- PREFABRICATED PEDESTRIAN BRIDGE
- TRANSIT CONNECTION NODE
- TRAIL UNDERPASS IMPROVEMENTS
- AT-GRADE PRIMARY TRAIL CROSSING

0.5 0 0.5 1 1.5 Miles

Trail Type	Width (Feet)	Distance (Linear Feet)	Distance (in Miles)	Material
Primary Trail	10-12	47,841	9.1	asphalt/concrete
Secondary Trail	8-10	18,190	3.4	decomposed granite
Neighborhood/Transit/Connector	8-10	27,120	5.1	asphalt/concrete
Conservation/Interpretive Trail	4-6	0	0.0	decomposed granite
Equestrian Corridor	4-6	31,399	5.9	sand/gravel

RIVER CHANNEL CROSS SECTION

Trail Amenities	Symbol	Quantity
Gateway		8
Primary Staging Area/Gateway		0
Secondary Staging Area		0
Trail Connection		4
Riverbed Access Ramp		1
Future Roadway Bridge		0
Prefabricated Pedestrian Bridge		1
Transit Connection Node		1
Trail Underpass Improvements		3
At-Grade Primary Trail Crossing		0

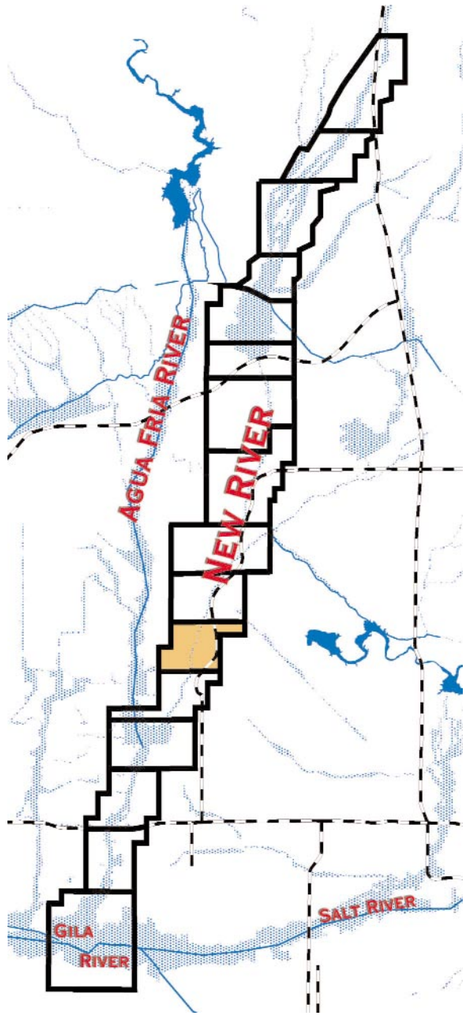
TRAIL SEGMENT C-11

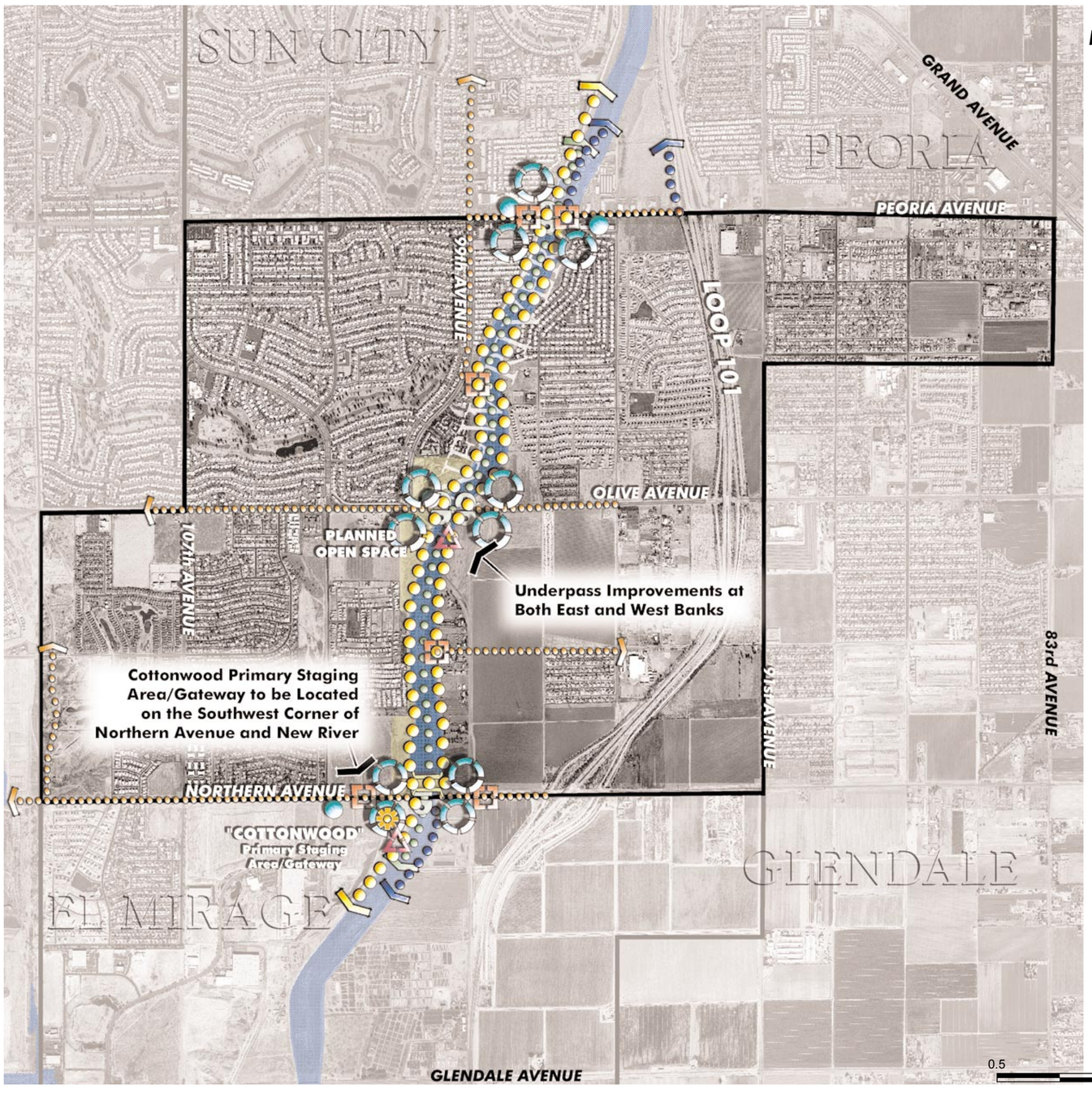
Peoria Avenue to Northern Ave.

Affected Jurisdictions: Maricopa County, Peoria, Glendale

Design Considerations:

- A series of open spaces along the Corridor from Olive/Dunlap Avenue to Northern Avenue is proposed as passive open space, river corridor restoration and landscape improvements. Primary trail improvements along both east and west banks are to be integrated into in the landscape areas.
- An equestrian route located in the channel will provide continuous facilities for equestrian needs. Riverbed access ramps will be necessary to allow access into the channel for equestrian usage at Olive/Dunlap and Northern Avenues.
- Informal secondary trail facilities may be located adjacent to the primary trail throughout trail segment C-11 to accommodate pedestrians and bicyclists in the area.
- Re-vegetation and riverbank reconstruction efforts designed to conserve the natural attributes of the River Corridor should be a primary consideration along both banks of the New River. Primary trail improvements in this area will require the Flood Control District of Maricopa County (FCDMC) to set aside a primary trail easement for preservation of trail access.
- Existing neighborhood on-street bike routes and side paths within neighborhoods should be connected to the primary trail to encourage interconnections and avoidance of higher traffic volume streets.
- Retrofitting existing arterial roadway bridge structures with primary trail underpass facilities at Olive/Dunlap and Northern Avenues will increase safety for trail users and provide uninterrupted flows on the trail system. Existing soil cement bank protected areas will require modification at Olive/Dunlap and Northern Avenues for proposed new underpasses.





MAP 19. TRAIL SEGMENT C-11 (CENTRAL REACH)

- PRIMARY TRAIL
- SECONDARY TRAIL
- NEIGHBORHOOD/TRANSIT CONNECTOR TRAIL
- CONSERVATION/INTERPRETIVE TRAIL
- EQUESTRIAN CORRIDOR
- ALTERNATE TRAIL ROUTE 'B'
- MAINTENANCE ROAD/PRIMARY TRAIL
- STUDY AREA BOUNDARY
- 100 YEAR FLOODPLAIN
- GATEWAY
- PRIMARY STAGING AREA/GATEWAY
- SECONDARY STAGING AREA
- TRAIL CONNECTION
- RIVERBED ACCESS RAMP
- FUTURE ROADWAY BRIDGE
- PREFABRICATED PEDESTRIAN BRIDGE
- TRANSIT CONNECTION NODE
- TRAIL UNDERPASS IMPROVEMENTS
- AT-GRADE PRIMARY TRAIL CROSSING

0.5 0 0.5 1 1.5 Miles

Trail Type	Width (Feet)	Distance (Linear Feet)	Distance (in Miles)	Material
Primary Trail	10-12	45,489	8.6	asphalt/concrete
Secondary Trail	8-10	42,055	8.0	decomposed granite
Neighborhood/Transit/Connector	8-10	9,317	1.8	asphalt/concrete
Conservation/Interpretive Trail	4-6	0	0.0	decomposed granite
Equestrian Corridor	4-6	21,033	4.0	sand/gravel

RIVER CHANNEL CROSS SECTION

Trail Amenities	Symbol	Quantity
Gateway		5
Primary Staging Area/Gateway		1
Secondary Staging Area		0
Trail Connection		2
Riverbed Access Ramp		2
Future Roadway Bridge		0
Prefabricated Pedestrian Bridge		2
Transit Connection Node		3
Trail Underpass Improvements		4
At-Grade Primary Trail Crossing		0

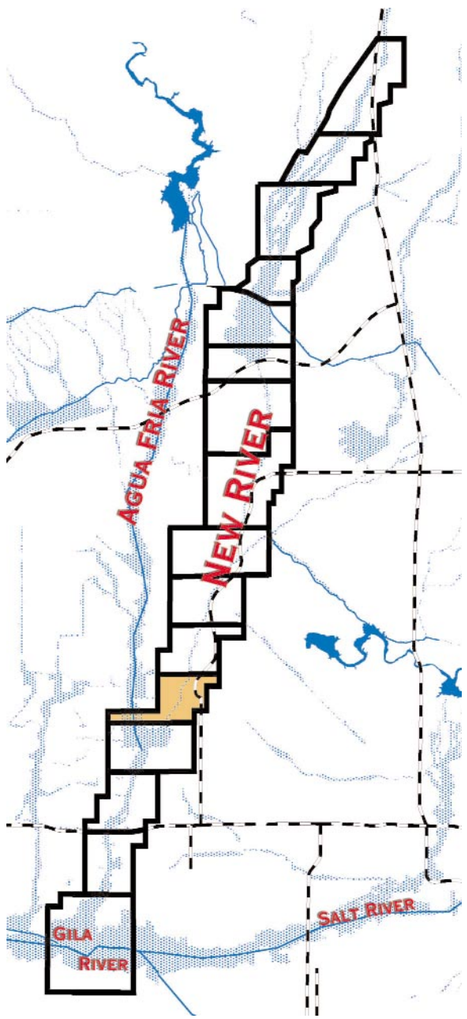
TRAIL SEGMENT C-12

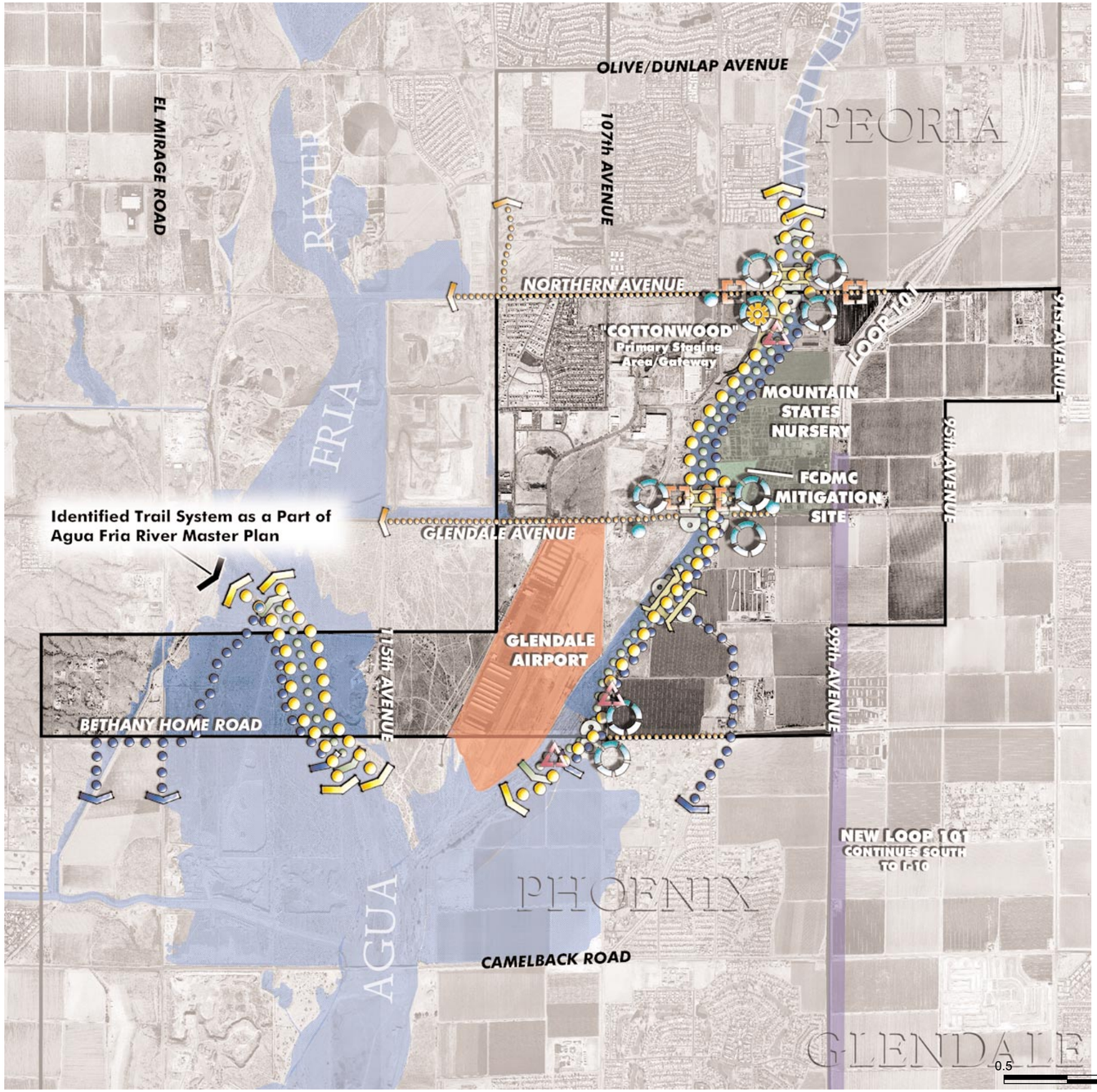
Northern Avenue to Bethany Home Road

Affected Jurisdictions: Maricopa County, Glendale, Phoenix, Peoria

Design Considerations:

- Primary trail facilities will follow the west bank from Northern Avenue to Glendale Avenue. The trail alignment will cross at Glendale Avenue and follow the east bank to Bethany Home Road.
- An equestrian route located in the channel will provide continuous facilities for equestrian needs. Ramps will be necessary to allow access into the channel for equestrian usage.
- Future expansion plans at Glendale Airport should accommodate trail users and access to the planned equestrian facility and primary staging area/gateway.
- A primary trail bridge structure is required for trail access across New River from the west bank to the east bank at Glendale Avenue.
- Secondary trail facilities located on the east bank will be developed throughout trail segment C-12 to accommodate pedestrians and bicyclists in the area.
- Re-vegetation along the New River banks shall conserve the natural attributes of the Corridor and should be a primary consideration along both banks of the New River. The Flood Control District of Maricopa County (FCDMC) will be required to dedicate a set aside or trail easement for primary trail access along the West Valley Multi-Modal Transportation Corridor.
- Provide future neighborhood access to the primary trail system for residential areas along the trail segment. Existing neighborhood on-street bike routes and side paths within the neighborhoods should be connected to the primary trail to encourage interconnections and avoidance of higher traffic volume streets. Public transit stop connectors should also be enhanced.
- Retrofitting existing bridge structures to include underpass facilities at Glendale Avenue and Bethany Home Road will increase safety for trail users and provide uninterrupted flows on the trail system. Existing soil cement bank protected areas will require modification at Glendale Avenue and Bethany Home Road bridge structures for proposed new underpass facilities.



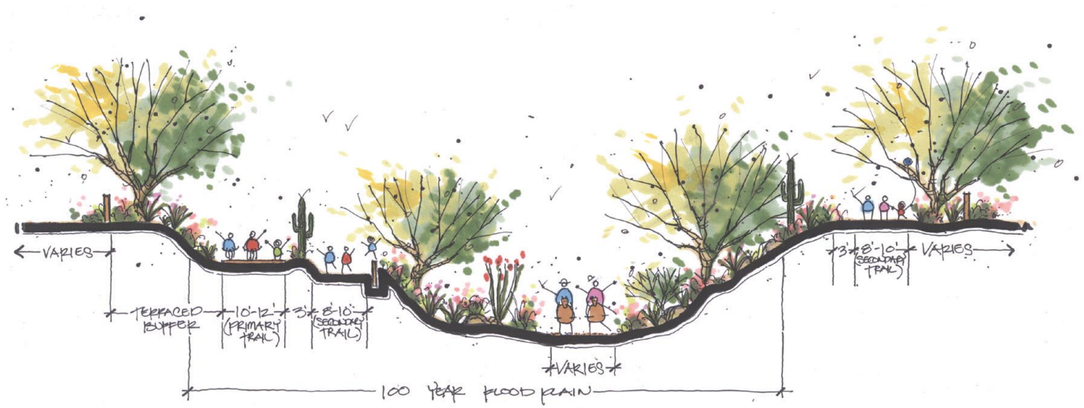


MAP 20. TRAIL SEGMENT C-12 (CENTRAL REACH)

- PRIMARY TRAIL
- SECONDARY TRAIL
- NEIGHBORHOOD/TRANSIT CONNECTOR TRAIL
- CONSERVATION/INTERPRETIVE TRAIL
- EQUESTRIAN CORRIDOR
- ALTERNATE TRAIL ROUTE 'B'
- MAINTENANCE ROAD/PRIMARY TRAIL
- STUDY AREA BOUNDARY
- 100 YEAR FLOODPLAIN
- GATEWAY
- PRIMARY STAGING AREA/GATEWAY
- SECONDARY STAGING AREA
- TRAIL CONNECTION
- RIVERBED ACCESS RAMP
- FUTURE ROADWAY BRIDGE
- PREFABRICATED PEDESTRIAN BRIDGE
- TRANSIT CONNECTION NODE
- TRAIL UNDERPASS IMPROVEMENTS
- AT-GRADE PRIMARY TRAIL CROSSING

0.5 0 0.5 1 1.5 Miles

Trail Type	Width (Feet)	Distance (Linear Feet)	Distance (in Miles)	Material
Primary Trail	10-12	51,368	9.7	asphalt/concrete
Secondary Trail	8-10	56,995	10.8	decomposed granite
Neighborhood/Transit/Connector	8-10	14,041	2.7	asphalt/concrete
Conservation/Interpretive Trail	4-6	0	0.0	decomposed granite
Equestrian Corridor	4-6	21,973	4.2	sand/gravel



RIVER CHANNEL CROSS SECTION

Trail Amenities	Symbol	Quantity
Gateway		4
Primary Staging Area/Gateway		1
Secondary Staging Area		0
Trail Connection		6
Riverbed Access Ramp		3
Future Roadway Bridge		0
Prefabricated Pedestrian Bridge		3
Transit Connection Node		0
Trail Underpass Improvements		0
At-Grade Primary Trail Crossing		2

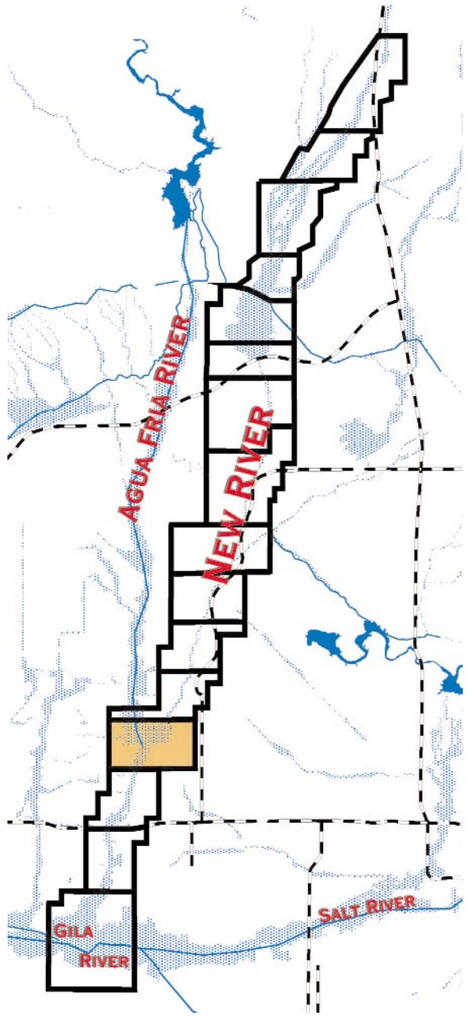
TRAIL SEGMENT S-13

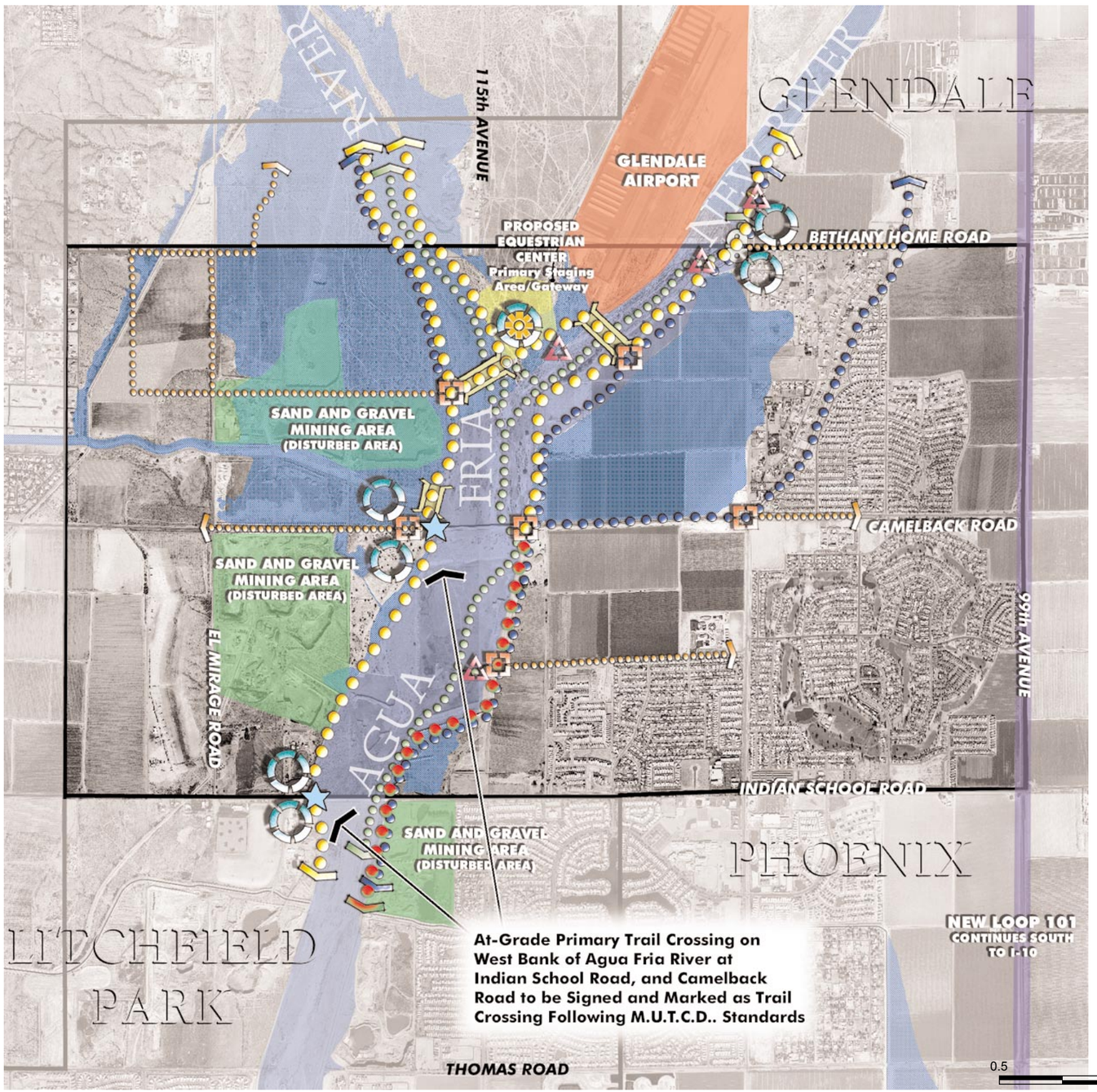
Bethany Home Road to Indian School Road

Affected Jurisdictions: Maricopa County, Phoenix

Design Considerations:

- An equestrian route located in the channel will provide continuous facilities for equestrian needs. Ramps will be necessary to allow access into the channel for equestrian usage at the proposed equestrian center primary staging area/gateway.
- Future expansion plans at Glendale Airport should be coordinated with primary trail improvements and access to planned equestrian facility and staging area. Flight patterns should consider compatibility with migratory bird habitats.
- A shared planned-use primary trail/Flood Control District of Maricopa County (FCDMC) maintenance road on the west bank of the Lower Agua Fria River should be designed to accommodate both trail users and maintenance vehicles along the Corridor.
- Secondary trail facilities located on the east bank adjacent to the FCDMC maintenance road will be developed throughout the Corridor along the Lower Agua Fria River south to the confluence of the Gila River.
- Re-vegetation and riverbank reconstruction efforts designed to conserve the nature attributes of the River Corridor should be a primary consideration along both banks of the New River.
- Provide future neighborhood access to primary trail system for those residential areas located along the Lower Agua Fria River. Existing and planned neighborhood on-street bike routes and side paths within the neighborhoods should be connected to the primary trail to encourage interconnections and avoidance of higher traffic volume street area.
- Retrofitting existing bridge structures to accommodate at-grade trail crossings at Camelback and Indian School Roads will provide an increased meaure of safety for trail users.
- A primary trail bridge structure will be required along the west bank north of Camelback Road to cross over a side channel feeding into the Lower Agua Fria River.

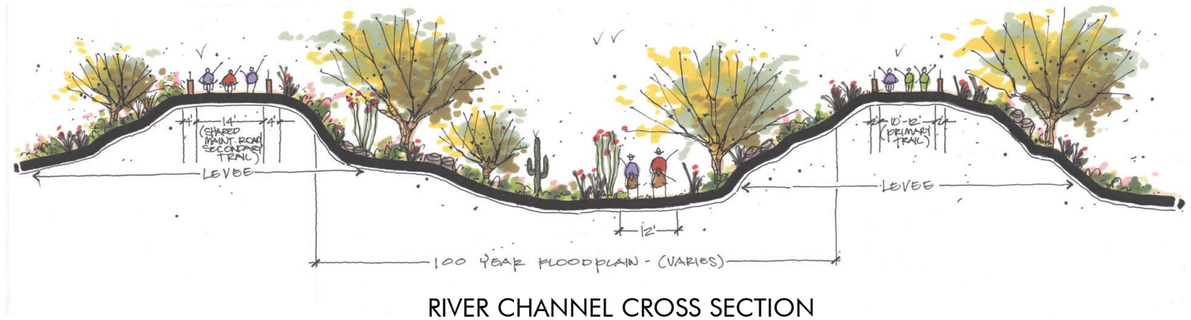




MAP 21. TRAIL SEGMENT S-13 (SOUTHERN REACH)

- PRIMARY TRAIL
- SECONDARY TRAIL
- NEIGHBORHOOD/TRANSIT CONNECTOR TRAIL
- CONSERVATION/INTERPRETIVE TRAIL
- EQUESTRIAN CORRIDOR
- ALTERNATE TRAIL ROUTE 'B'
- MAINTENANCE ROAD/PRIMARY TRAIL
- STUDY AREA BOUNDARY
- 100 YEAR FLOODPLAIN
- GATEWAY
- PRIMARY STAGING AREA/GATEWAY
- SECONDARY STAGING AREA
- TRAIL CONNECTION
- RIVERBED ACCESS RAMP
- FUTURE ROADWAY BRIDGE
- PREFABRICATED PEDESTRIAN BRIDGE
- TRANSIT CONNECTION NODE
- TRAIL UNDERPASS IMPROVEMENTS
- AT-GRADE PRIMARY TRAIL CROSSING

Trail Type	Width (Feet)	Distance (Linear Feet)	Distance (in Miles)	Material
Primary Trail	10-12	69,351	13.1	asphalt/concrete
Secondary Trail	8-10	34,671	6.6	decomposed granite
Neighborhood/Transit/Connector	8-10	22,894	4.3	asphalt/concrete
Conservation/Interpretive Trail	4-6	0	0.0	decomposed granite
Equestrian Corridor	4-6	23,029	4.4	sand/gravel



RIVER CHANNEL CROSS SECTION

Trail Amenities	Symbol	Quantity
Gateway		4
Primary Staging Area/Gateway		0
Secondary Staging Area		1
Trail Connection		4
Riverbed Access Ramp		1
Future Roadway Bridge		0
Prefabricated Pedestrian Bridge		1
Transit Connection Node		0
Trail Underpass Improvements		2
At-Grade Primary Trail Crossing		0

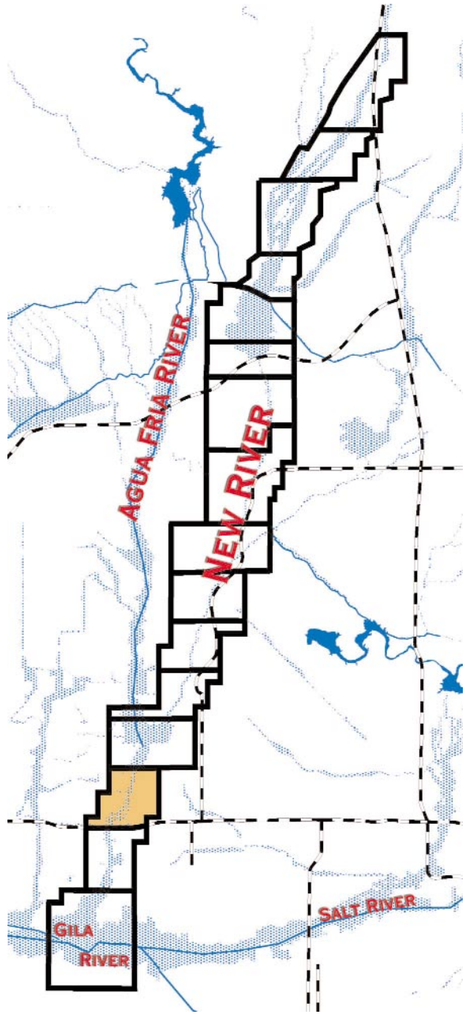
TRAIL SEGMENT S-14

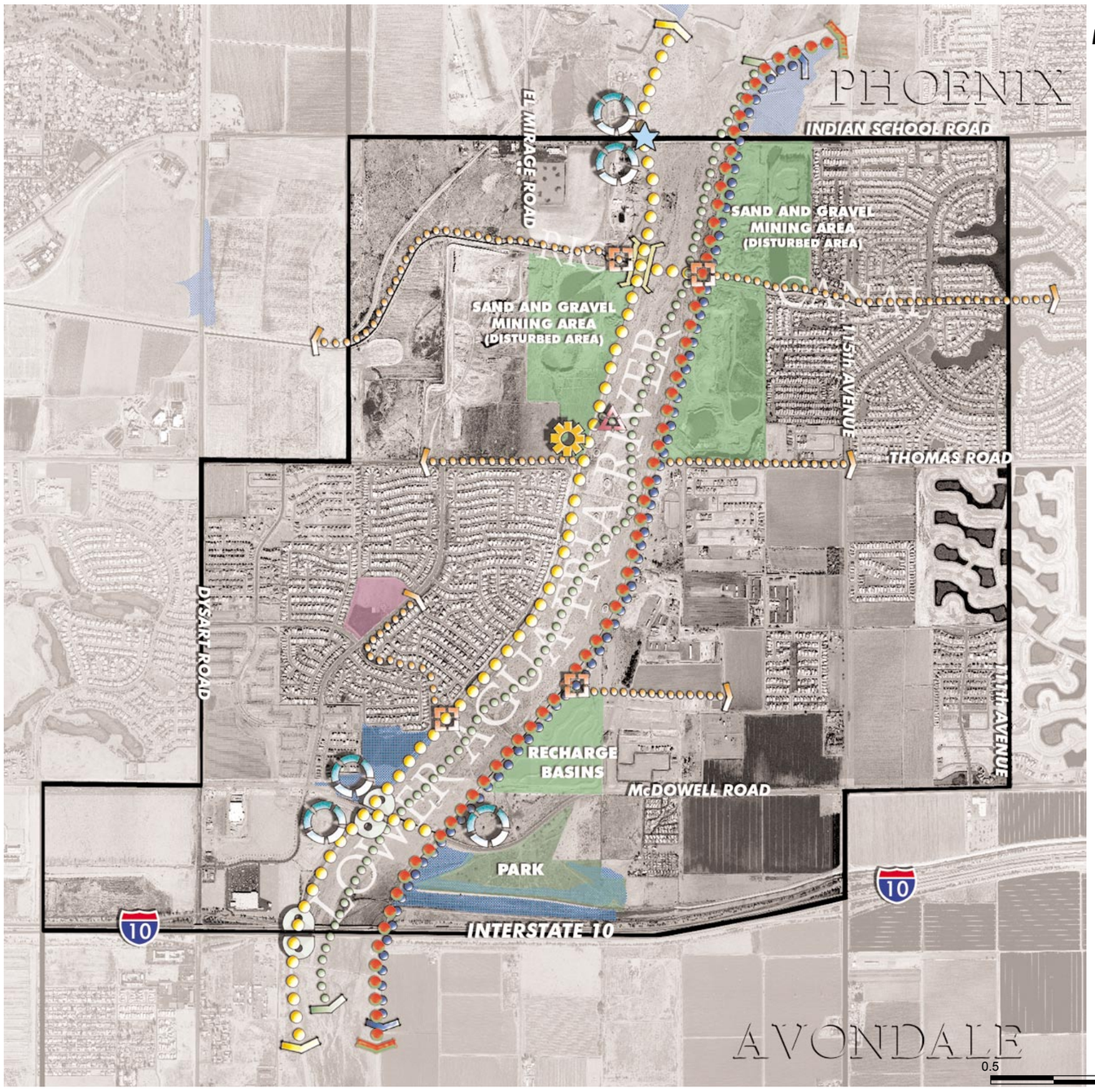
Indian School Road to I-10

Affected Jurisdictions: Avondale

Design Considerations:

- Long-term plans of current sand and gravel operations is to restore the disturbed landscape and provide for parallel primary trail shared use/maintenance road improvements along the west bank. A series of neighborhood connector trails are also proposed for the west bank, once current sand and gravel operations are discontinued.
- An equestrian route located in the channel will provide continuous facilities for equestrian needs along the Lower Agua Fria River.
- Secondary trail facilities located on the east bank, will be developed throughout trail segment S-14 to accommodate pedestrians and bicyclists in the area. This trail type will be shared with the Flood Control District of Maricopa County (FCDMC) maintenance road.
- Re-vegetation and riverbank reconstruction efforts designed to conserve the natural attributes of the Corridor should be a primary consideration along both banks of the Lower Agua Fria River.
- Provide future neighborhood access to the primary trail system for residential areas west of the Lower Agua Fria River. Existing and planned neighborhood on-street bike routes and side paths within the neighborhoods should be connected to the primary trail to encourage interconnections and avoidance of higher traffic volume streets.
- Retrofitting existing bridge structures to include underpass crossings at McDowell Road and Interstate 10 will increase safety for trail users and provide uninterrupted flows on the trail system. Any future plans for a bridge at Thomas Road should also include an underpass.
- A primary trail bridge structure is required on the west bank south of Indian School Road to link the primary trail from north to south.
- Existing soil cement bank protected areas will require modification at Indian School Road, McDowell Road and I-10 bridge structures for proposed new underpass facilities.
- Key sites along the Lower Agua Fria River include the "Chicken Ranch" and Coldwater Springs.



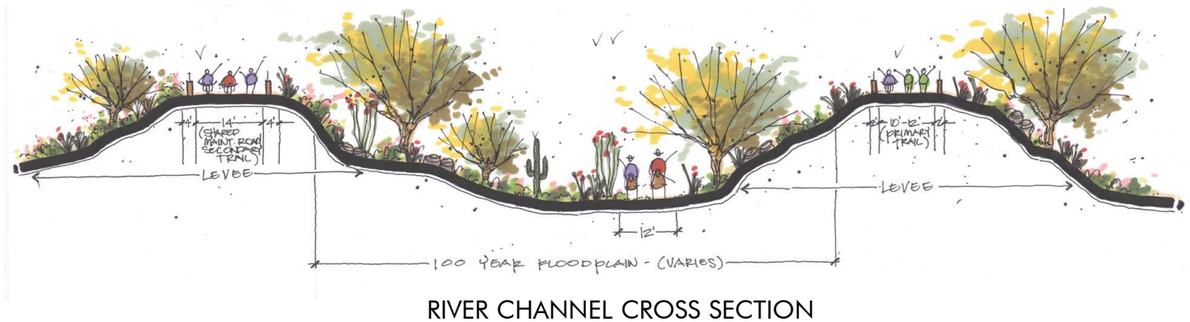


MAP 22. TRAIL SEGMENT S-14 (NORTHERN REACH)

- PRIMARY TRAIL
- SECONDARY TRAIL
- NEIGHBORHOOD/TRANSIT CONNECTOR TRAIL
- CONSERVATION/INTERPRETIVE TRAIL
- EQUESTRIAN CORRIDOR
- ALTERNATE TRAIL ROUTE 'B'
- MAINTENANCE ROAD/PRIMARY TRAIL
- STUDY AREA BOUNDARY
- 100 YEAR FLOODPLAIN
- GATEWAY
- PRIMARY STAGING AREA/GATEWAY
- SECONDARY STAGING AREA
- TRAIL CONNECTION
- RIVERBED ACCESS RAMP
- FUTURE ROADWAY BRIDGE
- PREFABRICATED PEDESTRIAN BRIDGE
- TRANSIT CONNECTION NODE
- TRAIL UNDERPASS IMPROVEMENTS
- AT-GRADE PRIMARY TRAIL CROSSING

0.5 0 0.5 1 1.5 Miles

Trail Type	Width (Feet)	Distance (Linear Feet)	Distance (in Miles)	Material
Primary Trail	10-12	46,835	8.9	asphalt/concrete
Secondary Trail	8-10	15,717	3.0	decomposed granite
Neighborhood/Transit/Connector	8-10	19,709	3.7	asphalt/concrete
Conservation/Interpretive Trail	4-6	0	0.0	decomposed granite
Equestrian Corridor	4-6	33,233	6.3	sand/gravel



RIVER CHANNEL CROSS SECTION

Trail Amenities	Symbol	Quantity
Gateway		5
Primary Staging Area/Gateway		0
Secondary Staging Area		1
Trail Connection		5
Riverbed Access Ramp		2
Future Roadway Bridge		0
Prefabricated Pedestrian Bridge		0
Transit Connection Node		3
Trail Underpass Improvements		3
At-Grade Primary Trail Crossing		0

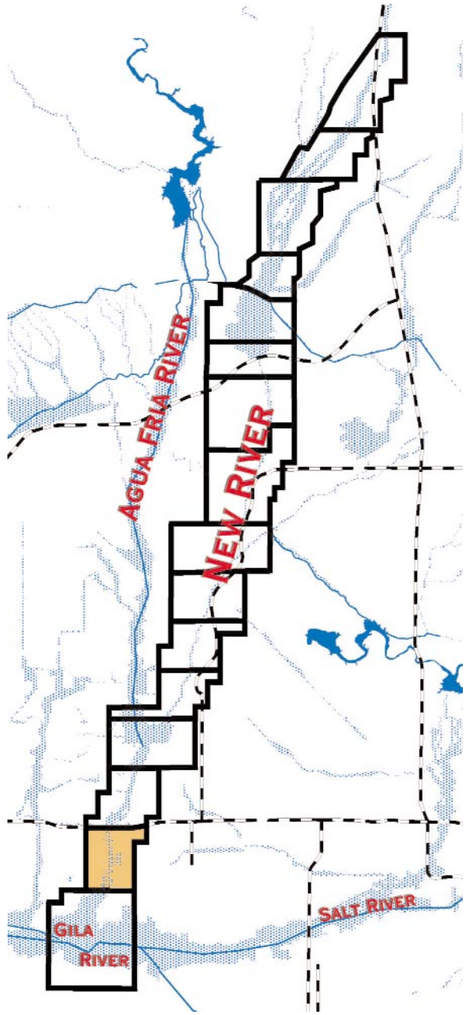
TRAIL SEGMENT S-15

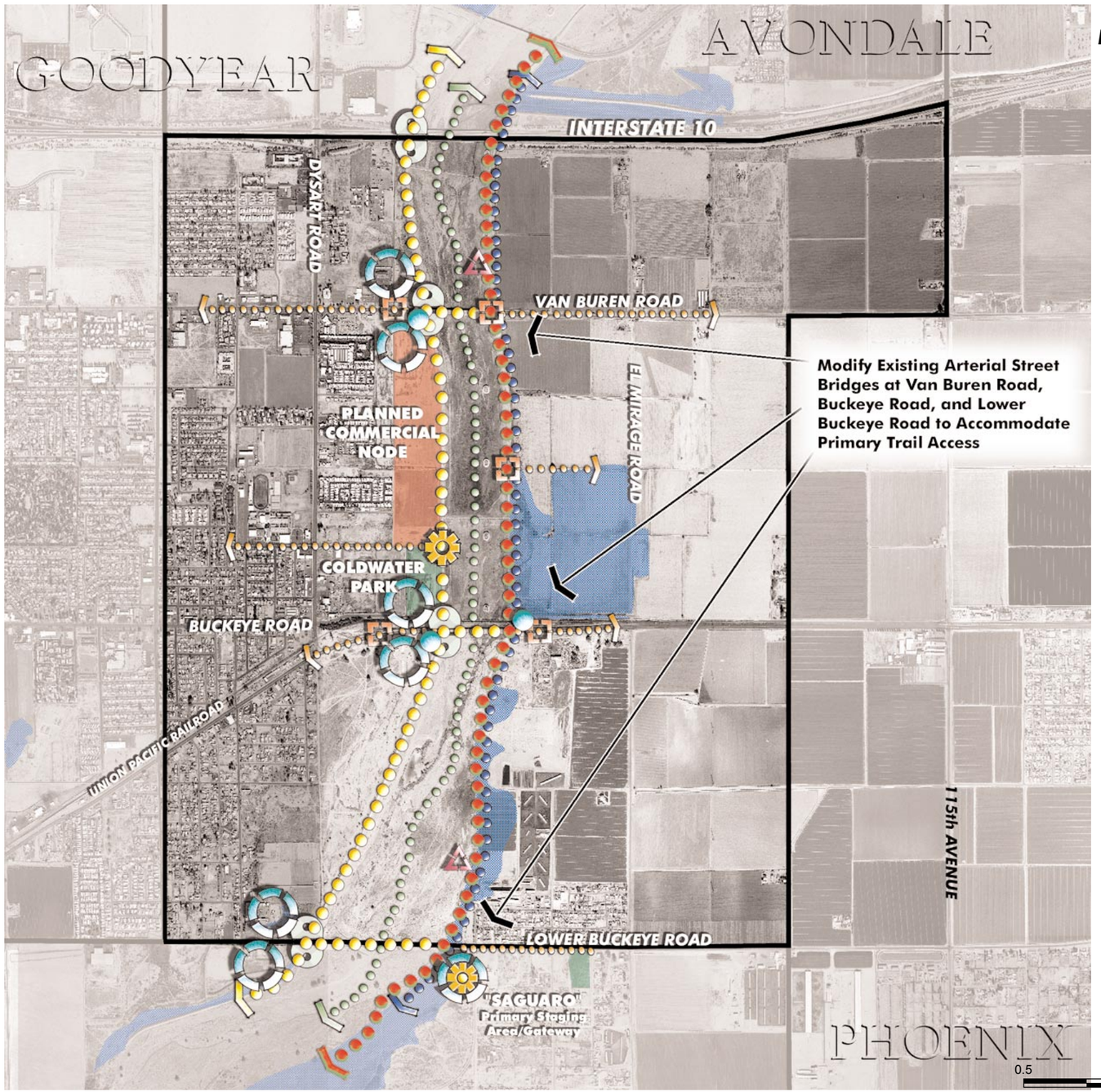
I-10 to Lower Buckeye Road

Affected Jurisdictions: Avondale, Arizona Department of Transportation (ADOT), Flood Control District of Maricopa County (FCDMC), Union Pacific Railroad

Design Considerations:

- Primary trail shared-use with the FCDMC maintenance road to be located on the west bank. An equestrian route located in the channel will provide continuous facilities for equestrian needs.
- Integrate urban plaza linkages to primary and public activity areas at future commercial core area planned between Van Buren and Buckeye Roads, on the west bank of the Lower Agua Fria River.
- Secondary trail facilities located adjacent to the primary trail, will be developed from I-10 to Van Buren Road to accommodate pedestrians and bicyclists in the area.
- Re-vegetation and riverbank reconstruction efforts designed to conserve the natural attributes of the Corridor should be a primary consideration along both banks of the Lower Agua Fria River. A dedicated trail easement of 50-150 feet should be established to protect and preserve the Lower Agua Fria River Corridor.
- Provide future neighborhood access to the primary trail system for those residential areas located south of New River Dam. Existing neighborhood on-street bike routes and side paths within the neighborhoods should be connected to the primary trail to encourage interconnections and avoidance of higher traffic volume street area.
- Retrofitting existing bridge structures into below-grade crossings at I-10, Van Buren Road, Buckeye Road and the Union Pacific Railroad will increase safety for trail users and provide uninterrupted flows on the trail system.
- Modify existing arterial bridge structures at Van Buren Road, Buckeye and Lower Buckeye Roads, and the Union Pacific Railroad to accommodate bicycle/pedestrian primary trails and link existing and future neighborhoods to the primary trails on both sides of the Lower Agua Fria River.
- Existing soil cement bank protected areas will require modification at I-10, Van Buren Road, Buckeye Road, and the Union Pacific Railroad bridge structures for proposed new underpasses.





MAP 23. TRAIL SEGMENT S-15 (SOUTHERN REACH)

- PRIMARY TRAIL
- SECONDARY TRAIL
- NEIGHBORHOOD/TRANSIT CONNECTOR TRAIL
- CONSERVATION/INTERPRETIVE TRAIL
- EQUESTRIAN CORRIDOR
- ALTERNATE TRAIL ROUTE 'B'
- MAINTENANCE ROAD/PRIMARY TRAIL
- STUDY AREA BOUNDARY
- 100 YEAR FLOODPLAIN
- GATEWAY
- PRIMARY STAGING AREA/GATEWAY
- SECONDARY STAGING AREA
- TRAIL CONNECTION
- RIVERBED ACCESS RAMP
- FUTURE ROADWAY BRIDGE
- PREFABRICATED PEDESTRIAN BRIDGE
- TRANSIT CONNECTION NODE
- TRAIL UNDERPASS IMPROVEMENTS
- AT-GRADE PRIMARY TRAIL CROSSING

Trail Type	Width (Feet)	Distance (Linear Feet)	Distance (in Miles)	Material
Primary Trail	10-12	76,257	14.4	asphalt/concrete
Secondary Trail	8-10	50,979	9.7	decomposed granite
Neighborhood/Transit/Connector	8-10	0	0.0	asphalt/concrete
Conservation/Interpretive Trail	4-6	0	0.0	decomposed granite
Equestrian Corridor	4-6	27,894	5.3	sand/gravel

RIVER CHANNEL CROSS SECTION

Trail Amenities	Symbol	Quantity
Gateway		7
Primary Staging Area/Gateway		2
Secondary Staging Area		0
Trail Connection		2
Riverbed Access Ramp		0
Future Roadway Bridge		0
Prefabricated Pedestrian Bridge		1
Transit Connection Node		0
Trail Underpass Improvements		0
At-Grade Primary Trail Crossing		0

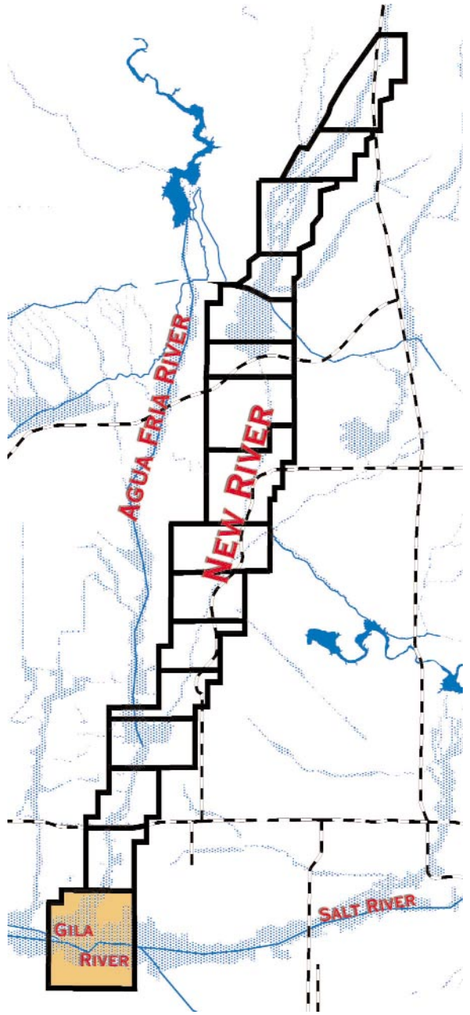
TRAIL SEGMENT S-16

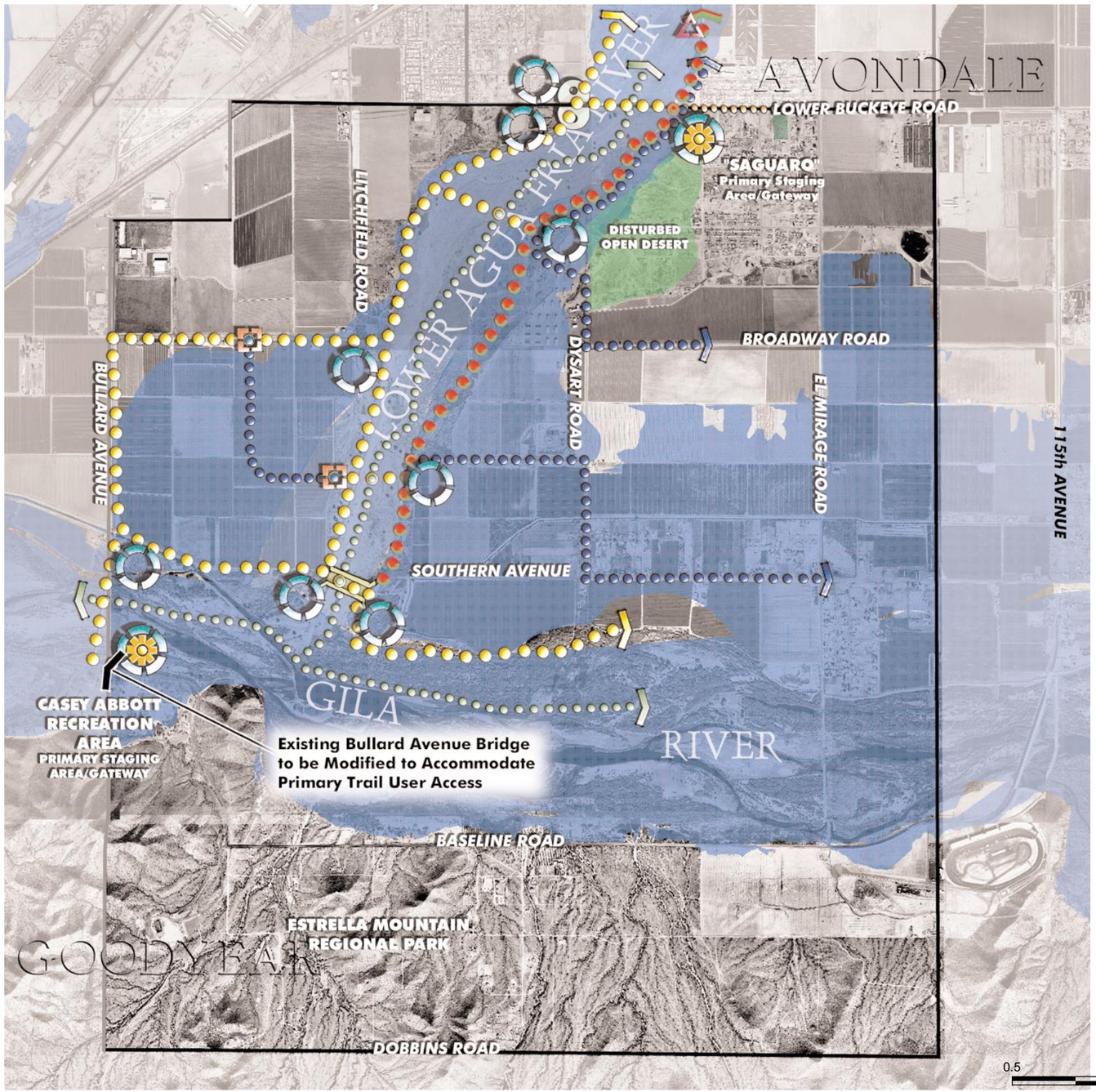
Lower Buckeye Road to Dobbins Road/Gila River Confluence

Affected Jurisdictions: Avondale, Maricopa County

Design Considerations:

- An equestrian route located in the channel will provide continuous facilities for equestrian needs.
- Re-vegetation and riverbank reconstruction efforts designed to conserve the natural attributes of the Corridor should be a primary consideration along both banks of the New River. Before further development continues in this area a dedicated set aside or easement should be established to protect and preserve the West Valley Multi-Modal Transportation Corridor. Primary, secondary and conservation/interpretive trails throughout this area should serve to protect the existing natural desert as much as possible.
- Retrofitting existing bridge structure into below-grade crossings at Lower Buckeye Road will increase safety for trail users and provide uninterrupted flows on the trail system.
- The Casey-Abbott Recreation Area and Estrella Mountain Regional Park offer significant recreational opportunities. Primary trail access to these recreational destinations will be critical.
- Existing soil cement bank protected areas will require modification at Lower Buckeye Road bridge structure for proposed new underpass facilities.
- New landscape plantings along the bank areas will provide a restored desert habitat. New reclaimed water lines will then be required to support landscape improvements along the trail facilities.
- A primary trail is located along both banks of the New River to allow linkages to the trail systems in both the West Valley Multi-Modal Transportation Corridor Master Plan and the Agua Fria River Watercourse Master Plan. Right-of-way access along this trail segment is primarily ownership of the Flood Control District of Maricopa County (FCDMC).
- Secondary trail access into planned and existing neighborhoods to link the Lower Agua Fria River Corridor will require coordination between local city jurisdictions, developers, and neighborhood associations along the West Valley Recreation Corridor.
- Bullard Avenue bridge to be modified to accommodate primary trail access to the planned Casey-Abbott Recreation Area –primary staging area/gateway.





MAP 24. TRAIL SEGMENT S-16 (SOUTHERN REACH)

- PRIMARY TRAIL
- SECONDARY TRAIL
- NEIGHBORHOOD/TRANSIT CONNECTOR TRAIL
- CONSERVATION/INTERPRETIVE TRAIL
- EQUESTRIAN CORRIDOR
- ALTERNATE TRAIL ROUTE 'B'
- MAINTENANCE ROAD/PRIMARY TRAIL
- STUDY AREA BOUNDARY
- 100 YEAR FLOODPLAIN
- GATEWAY
- PRIMARY STAGING AREA/GATEWAY
- SECONDARY STAGING AREA
- TRAIL CONNECTION
- RIVERBED ACCESS RAMP
- FUTURE ROADWAY BRIDGE
- PREFABRICATED PEDESTRIAN BRIDGE
- TRANSIT CONNECTION NODE
- TRAIL UNDERPASS IMPROVEMENTS
- AT-GRADE PRIMARY TRAIL CROSSING

0.5 0 0.5 1 1.5 Miles

PRELIMINARY COST ESTIMATES

Estimated costs for the development of the New River and Lower Agua Fria River Corridor are provided below. The estimated costs are calculated based on 2001 cost estimate values and are determined for each of the individual sixteen (16) trail segments defined as a part of the West Valley Multi-Modal Transportation Corridor Plan (Plan). The total estimated cost of development of each trail segment includes trail types and trail elements and amenities such as gateways, staging areas, bridge structures and signage within each trail segment.

Table 1, Total Estimated Costs By Trail Segment, summarizes the total estimated costs for trail types and all trail elements for the sixteen (16) trail segments defined in the Plan, representing a total estimated probable cost for trail improvements along the entire 42-mile New River and Lower Agua Fria River Corridor. These probable cost estimates do not include land acquisition cost or related fees, or design fees.

Appendix A, Detailed Cost Estimates By Trail Segment, is an itemized break down of each trail segment. Average quantities, units (each, square feet or linear feet), cost per unit and totals for each item are presented for paving, lighting, landscaping and other amenities for each of the five trail types within each segment, as well as the total estimated cost to develop each segment. Estimated costs for developing each gateway, primary and secondary staging area, river channel access ramp, prefabricated structural bridge for trail users, transit connector improvement, trail underpass improvement at major streets, interstate corridor and railroad corridor are also included.

TRAIL SEGMENT	TRAIL SEGMENT (from - to)	TRAIL TYPE					TRAIL ELEMENTS	ESTIMATED TOTAL COST
		PRIMARY	SECONDARY	NEIGHBORHOOD/ TRANSIT/CONNECTOR	CONSERVATION/ INTERPRETIVE	EQUESTRIAN		
N-1	New River/I-17 to Anthem Way	$ 1,020,000	$ 137,000	$ 349,000	$ 17,000	$ 6,100	$ 6,377,000	$ 7,906,000
N-2	Anthem Way to Desert Hills Drive	$ 908,000	$ 87,000	$ 401,000	$ 35,000	$ 11,000	$ 186,000	$ 1,628,000
N-3	Desert Hills Drive to Carefree Hwy (SR #74)	$ 789,000	$ 166,000	$ 371,000	$ 70,000	$ 12,000	$ 2,187,000	$ 3,595,000
N-4	Carefree Hwy (SR #74) to Central AZ Project (CAP)	$ 796,000	$ 147,000	$ 112,000	$ 23,000	$ 4,000	$ 10,652,000	$ 11,734,000
N-5	CAP to Lake Pleasant Hwy/West Wing Mtn.	$ 753,000	$ 157,000	$ 305,000	$ 31,000	$ 10,000	$ 2,069,000	$ 3,325,000
N-6	Lake Pleasant Hwy/West Wing Mtn. To Jomax Rd.	$ 628,000	$ 173,000	$ 84,000	$ 49,000	$ 7,000	$ 6,319,000	$ 7,260,000
C-7	Jomax Rd to Pinnacle Peak/Deer Valley Rd.	$ 592,000	$ 108,000	$ 630,000	$ -	$ 3,000	$ 3,315,000	$ 4,648,000
C-8	Pinnacle Peak/Deer Valley Rd. to Bell Rd.	$ 1,064,000	$ 75,000	$ 1,153,000	$ -	$ 5,000	$ 5,014,000	$ 7,311,000
C-9	Bell Rd. to Thunderbird Rd.	$ 600,000	$ 82,000	$ 215,000	$ -	$ 7,000	$ 4,566,000	$ 5,470,000
C-10	Thunderbird Rd. to Peoria Avenue	$ 499,000	$ 95,000	$ 264,000	$ -	$ 2,000	$ 1,329,000	$ 2,189,000
C-11	Peoria Avenue to Northern Avenue	$ 1,064,000	$ 67,000	$ 386,000	$ -	$ 6,000	$ 3,639,000	$ 5,162,000
C-12	Northern Avenue to Bethany Home Rd.	$ 1,015,000	$ 134,000	$ 137,000	$ -	$ 4,000	$ 5,910,000	$ 7,200,000
S-13	Bethany Home Rd. to Indian School Rd.	$ 1,138,000	$ 172,000	$ 203,000	$ -	$ 4,000	$ 5,364,000	$ 6,881,000
S-14	Indian School Rd. to I-10	$ 1,516,000	$ 113,000	$ 327,000	$ -	$ 5,000	$ 2,942,000	$ 4,903,000
S-15	I-10 to Lower Buckeye Rd.	$ 1,043,000	$ 60,000	$ 282,000	$ -	$ 7,000	$ 2,239,000	$ 3,631,000
S-16	Lower Buckeye Rd. to Dobbins Rd/Gila River Confluence	$ 1,661,000	$ 159,000	$ -	$ -	$ 6,000	$ 2,575,000	$ 4,401,000

TOTAL
$ 87,244,000

TABLE 1. TOTAL ESTIMATED COSTS BY TRAIL SEGMENT

Design Guidelines

TRAIL DESIGN CONSIDERATIONS

To fully implement the vision of this Plan, trails and their associated amenities, such as staging areas, gateways, bridge structures, and restroom facilities, should also be designed in harmony with the natural setting to retain natural appearances and values of the New River and Lower Agua Fria River Corridor (Corridor). Trail design should require the minimum amount of construction necessary to provide for public use while protecting natural and cultural resources to maximize the value of public expenditures. Trail design should also take into consideration the unique qualities and community needs of the West Valley including trail access, private property rights, and impacts related to flood control and development.

Human Factors

Trails must be accessible to users of all ages and all abilities wherever possible to meet the goals of this Plan. Just as all travelers, trail users desire relatively direct routes to schools, businesses, shopping areas, parks and other places of interest. If the designated trail is not the easiest and most obvious route, trail users create new, unauthorized trails. Trails should not, however, be designed with straight alignments in attempting to meet the goal of directness. If possible, trails should be slightly curvilinear to provide visual interest to users without having sharp curves that can reduce safety and directness.

Scenery

Trails should be designed to provide users varying views of the surrounding areas. Preserving visual corridors will improve the quality of the users experience of the trail system. Accentuate regional views of adjacent mountains and skylines from the trail.

Adjacent Landowner Privacy

Trails should provide privacy to landowners adjacent to trails and trail access facilities by modifying trail alignment, planting landscape buffers, installing walls, allowing grade separations, or using a combination of these methods. Locating trails further from private property and buildings is preferable, when possible. Locating primary trail facilities away from physical objects, such as screen walls, fences or landscaping, will improve sight visibility distances for bicyclists and pedestrians at heavily congested areas. Some viewing ability of the trails and of the property, however, can actually help improve security for both trail users and property owners. Local access to the trail for nearby residents is encouraged. Incorporating the trail into neighborhood watch systems can also help to improve security.

Native Plants

Trails should be aligned to have the least impact on surrounding vegetation, especially those protected under local, state and/or federal regulation. Trails should be designed to have a minimum impact on plants identified for protection. If the trail must pass close enough to impact these plants, the plants should be relocated rather than destroyed. New plants designed as part of gateways, staging areas, or along the corridor should be selected from approved plant lists provided by the Flood Control District of Maricopa County (FCDMC) or any local governing jurisdiction.

Sensitive Wildlife Habitat

Trails should be designed to have a minimum impact on natural desert preserve areas. Trails should avoid sensitive habitat areas. New planting designs should, wherever feasible, be designed to re-introduce habitat areas and improve riverbank restoration efforts.

Archaeological and Cultural Resources

Trails should be designed to avoid archaeological and cultural resource sites. These sites may be utilized as features in Conservation/Interpretative Trails in a way that informs trail users of historic and cultural resources. Documented known cultural resource sites should be protected at all costs.

Existing and Planned Maintenance Roads

Trails should utilize existing and planned maintenance roads in accordance with the policy of the FCDMC where those roads are or will be available. Joint use of existing pre-established offroad dirt roads for trails will allow for cost efficiency and minimized impacts on the natural surroundings. Paved or unpaved trails along the corridor may be developed parallel to these existing dirt roadways where desirable and feasible, in order to minimize additional impacts to the desert riparian area.

Flood Plain

A variety of trail types should be designed for the 25, 50 and 100-year flood plain in order to give hikers, mountain bike riders and equestrians the opportunity for trails access in attractive, undeveloped open spaces. Due to maintenance considerations and costs, improved trails (i.e., paved or decomposed granite trails) should be located in or just outside of the 100-year flood plain wherever possible, and on top of bank protected areas.

Shared-Use and Universally Accessible Trails

Trails should be constructed where feasible for all non-motorized uses including pedestrians, bicyclists, joggers, rollers (rollerbladers, rollerskaters and skateboarders) and equestrians. Trails should provide adequate sight distances, trail widths, and trailhead facilities to accommodate a variety of users. In many areas, trails should be designed to accommodate universally accessible trail improvements. All primary trails should be accessible for all non-motorized users.

Trail Access

Staging areas, gateways and neighborhood/commercial nodes should be designed to accommodate non-motorized trail users while restricting or regulating certain types of motorized trail users (i.e., maintenance and law enforcement vehicles). The use of bollards or gateway features will reduce certain un-authorized vehicle access.

MAINTENANCE ROADS PROVIDE COST-EFFICIENT OPPORTUNITIES FOR TRAIL DESIGN

LANDSCAPE PLANT THEME

The overall landscape plant theme for the West Valley Rivers Corridor is a natural Sonoran Desert landscape character. This native vegetation character will include a combination of natural areas and desert planting themes in activity areas. Lush plants, palms and green turf areas are not a part of the river corridor theme and character. Plant groupings include native plants, low-water use plants, with some introduced plants and ornamental plants for accents.

Plant groupings are organized into water use groupings and Landscape Management Zones, including conservation, passive and active areas. These landscape management zones were described in the "Analysis and Trails Classification" section. Refer to the Landscape Plant Theme Matrix (right, **Table 2**), showing plant groupings that are most and least appropriate/suitable for each Landscape Management Zone.

Corridor Segments

The plant themes in the northern reach reflect a conservation landscape management zone with the native character of the existing Sonoran Desert. This reach includes large existing areas for conservation and proposed trail amenity areas for passive, low intensity uses. Plant materials include native grasses, shrubs and cacti, including Saguaros and other native species.

The lower part of the northern reach plant themes reflect the native character of the existing Sonoran Desert. This reach includes sensitive riparian areas north of the existing New River Dam, designated for conservation. Proposed trails should provide conservation and environmental interpretation experiences in this area. Plant materials include native grasses, shrubs and trees, including existing Ironwood trees. New plants should include native plants and some low-water use plants at activity nodes.

The plant themes of the central reach reflect passive and active landscape management zones within the river areas and on the top banks along the river. This reach includes river bottom areas of natural grasses and shrubs with highly structured hard concrete soil cement channelized river edges creating riverbanks. Passive and active use areas on the adjacent top banks along edges of the river channel banks include a few natural areas, some developed landscapes adjacent to new residential developments and some disturbed areas needing rehabilitation. New plants in this reach should include low-water use plants that require minimal supplemental water. New plants may also include introduced plant materials that are adapted to our desert character with a moderate level of supplemental water at activity nodes.

The plant theme of the southern reach is similar to the central reach, except at the south portion of the reach at the junction with the Gila River. This special area should include native plants, low-water use plants and aquatic plants in the wet riparian areas. A detailed list of all plant materials suitable for each reach within the New River and Lower Agua Fria Corridor is listed below under "Categories of Plant Materials." The plant materials categorized will meet all Flood Control District of Maricopa County (FCDMC) guidelines for landscape and aesthetic policy.

LANDSCAPE USES		CONSERVATION AREAS	PASSIVE AREAS	ACTIVE AREAS
PLANT GROUPINGS	NATIVE PLANTS			
	Plant types that need a temporary irrigation system to establish initial growth	●	◑	○
	LOW WATER USE PLANTS			
	Plant types that have adapted well to desert climate and that take minimal supplemental water	◑	●	●
	INTRODUCED PLANTS			
	Plant types that have adapted to the desert climate with a moderate level of supplemental water	○	◑	●
	ORNAMENTAL PLANTS			
	Plant types that have adapted to the desert climate with a moderate to high level of supplemental water	X	X	●

LEGEND:

●	most appropriate / most suitable match
◑	appropriate / suitable match
○	least appropritate / least suitable match
X	not appropriate / not suitable

TABLE 2. LANDSCAPE PLANT THEME MATRIX

CATEGORIES OF PLANT MATERIALS

NATIVE:

TREES

Cercidium species	Palo Verde
Olneya tesota	Ironwood
Prosopis velutina	Native Mesquite

SHRUBS

Ambrosia deltoidea	Bur-sage
Celtia pallida	Desert Hackberry
Encelia farinosa	Brittlebush
Ephedra species	Joint-fir
Ericameria laricifolia	Turpentine Bush
Larrea tridentata	Creosote Bush
Simmondsia chinensis	Jojoba

CACTI & SUCCELENTS

Carnegiea gigantea	Saguaro
Echinocereus species	Hedgehog
Ferocactus species	Barrel Cactus
Fouquieria splendens	Ocotillo
Opuntia species	Prickly-Pear, Cholla
Yucca baccata	Banana Yucca
Yucca Elata	Soaptree Yucca

LOW WATER USE:

TREES

Acacia species	Acacia
Dalbergia sissoo	Sissoo Tree
Lysiloma microphylla v. thornberi	Desert Fern
Olea Europea 'Swan Hill'	Swan Hill Olive

SHRUBS

Atriplex species	Saltbush
Calliandra californica	Baja Red Fairy Duster
Calliandra eriophylla	Pink Fairy Duster
Cassia species	Cassia
Cordia boissieri	Texas Olive
Cordia parvifolia	Little-Lead Cordia
Justicia californica	Chuparosa
Justicia spicigera	Mexican Honeysuckle
Leucophyllum species	Sage

ACCENTS

Agave species	Agave
Aloe species	Aloe
Asclepias subulata	Desert Milkweed
Caesalpinia mexicana	Mexican Bird of Paradise
Caesalpinia pulcherrima	Red Bird of Paradise
Dasylirion wheeleri	Desert Spoon
Hesperaloe parviflora	Red Yucca
Muhlenbergia species	Deer Grass
Nolina species	Bear Grass
Penstemon species	Beard Tongue
Salvia species	Sage
Sphaeralcea species	Globe Mallow
Yucca Brevifolia	Joshua Tree
Yucca rigida	Blue Yucca

GROUNDCOVERS & VINES

Baccharis hybrid 'Starn'	Thompson Desert Broom
Baileya multiradiata	Desert Marigold
Bougainvillea species	Bougainvillea
Convolvulus cneorum	Bush Morning Glory
Dalea species	Indigo Bush
Eschscholzia californica	California Poppy
Eschscholzia mexicana	Mexican Gold Poppy
Hymenoxys acaulis	Angelita Daisy
Lantana camara	Lantana
Melampodium leucanthum	Blackfoot Daisy
Penstemon species	Penstemon
Zauschneria californica	Hummingbird Flower

LOW/MODERATE WATER USE:

TREES

Albezia julibrissin	Silk Tree	
Chilopsis linearis	Desert Willow	
Chorisia speciosa	Silk Floss Tree	
Fraxinus velutina	'Rio Grande'	Fan-Tex Ash
Jacaranda mimosifolia	Jacaranda	
Pinus species	Pine	
Pithecellobium flexicaule	Texas Ebony	
Quercus species	Oak	
Rhus lancea	African Sumac	
Schinus molle	California Pepper Tree	
Schinus trebinthifolius	Brazilian Pepper Tree	
Sophora secundiflora	Texas Mountain Laurel	
Ulmus parvifolia 'sempervirens'	Evergreen Elm	
Vitex agnus-castus	Chaste Tree	

SHRUBS

Abelia grandiflora	Glossy Abelia
Acuba japonica	Japanese aucuba
Arbutus unedo	Strawberry Tree
Buxus microphylla 'japonica'	Japanese boxwood
Carissa gradniflora	Natal Plum
Dodonea viscosa	Hop Bush
Dodonea viscosa 'purpurea'	Purple Hop Bush
Euonymus japonica	Evergreen Euonymus
Feijoa sellowiana	Pineapple Guava
Hibiscus rosa sinensis	Chinese Hibiscus
Ilex vomitoria 'nana'	Dwarf Yaupon Holly
Juniperus species	Juniper
Laurus nobilis	Grecian Laurel
Ligustrum japonicum	Japanese Privet
Myrtus communis	Myrtle
Nandina domestica	Heavenly bamboo
Nerium oleander 'Petite Pink'	Oleander
Osmanthus fragrans	Sweet Olive
Prunus caroliniana	Carolina Laurel Cherry
Punica granatum varieties	Pomegranate
Raphiolepis indica	India hawthorn
Rosmarinus officinalis	Rosemary
Ruellia californica	Ruellia
Ruellia peninsularis	Ruellia
Santolina virens	Green Lavender Cotton
Tagetes species	Marigold
Tecoma stans	Yellowbells
Tecomaria capensis	Cape Honeysuckle
Vauquelinia californica	Arizona Rosewood

ACCENTS

Dietes vegeta	Fortnight Lily
Chamerops humilis	Mediterranean Fan Palm

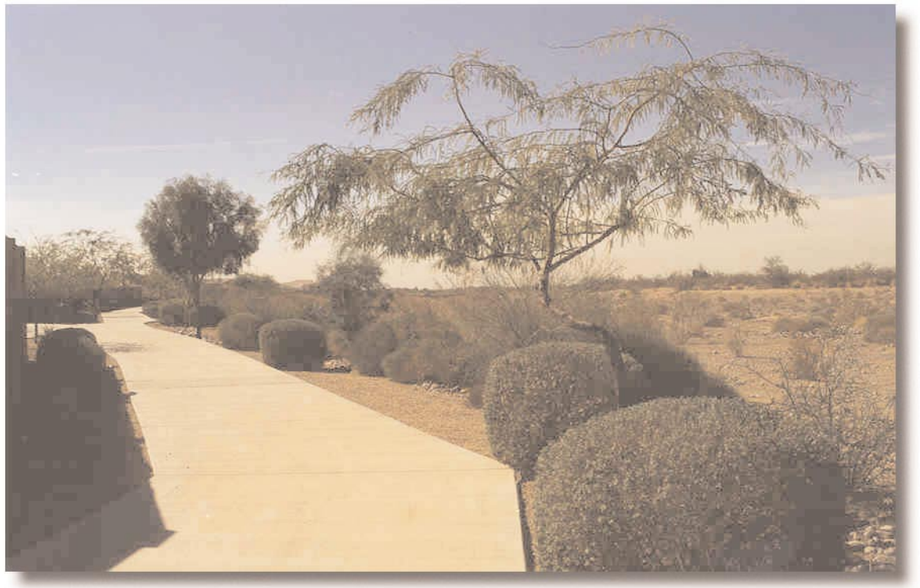
GROUNDCOVERS & VINES

Asparagus densiflorus 'Sprengeri'	Sprenger Asparagus
Campsis radicans	Common Trumpet Creeper
Cissus trifoliata	Grape Ivy
Euonymus fortunei	Common Winter Creeper
Gazania species	Gazania
Macfadyena unguis-cati	Cat's Claw
Liriope muscari	Big-Blue-Lily-Turf
Myoprum parvifolium	Myoporum
Oenothera berlandieri	Mexican Evening Primrose
Rosa banksiae	Lady Bank's Rose
Solanum jasminoides	Potato Vine
Vebena species	Verbena
Trachelospermum jasminoides	Star Jasmine
Pyracantha species	Firethorn

ORNAMENTAL:

TREES

Ficus species	Ficus
Lagerstromia indica	Crape Myrtle
Phoenix canariensis	Canary Island Date Palm
Phoenix dactylifera	Date Palm
Prunus cerasifera 'atroprupurea'	Purple-Leaf Plum
Pyrus kawakamii	Evergreen Pear



TRAIL LINED WITH NATIVE VEGETATION

Trail Design Guidelines

Trails, trail crossings of roadways, signage, and striping shall be designed to guidelines contained within the most recent editions of the American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities, the Arizona Bicycle Facility Design Guidelines, the United States Department of Transportation (USDOT) Designing Sidewalks and Trails for Access, the USDOT Manual on Uniform Traffic Control Devices, the Maricopa Association of Governments (MAG) Arterial Solutions to Pedestrian Midblock Crossings at Canals, and other guidelines recognized by the State of Arizona, MAG, and USDOT.

The following are general trail guidelines according to the Americans with Disabilities Act (ADA), and apply to trails in general. Variations may occur according to specific trail types and varying environments (see **Table 3. Design Guidelines Matrix** for these variations).

Grade. Grade should not exceed five percent unless constructed according to the ADA. Frequent or drastic changes in grade should be avoided. However, occasional fluctuations in the trail grade should be considered to provide variation for trail users and to facilitate proper drainage. Trails should not be constructed on side slopes greater than 40%.

Surface. The chosen surface must be stable, firm and slip resistant. Preferred surface materials should be an asphalt/concrete mix, concrete or rubberized asphalt in developed areas, decomposed granite in undeveloped areas, varying according to trail type. Surface materials should be free of irregularities and the edge of the surface should be uniform in width. Designated primary trail hard surface material can vary from poured concrete to asphaltic concrete, or even an environmentally sensitive rubberized-asphalt material throughout the trail length. The final determination for choice of pavement material will be based on several criteria including: cost, level of use, durability, maintenance, and community preference. For purposes of cost estimating, an asphaltic concrete material has been selected using a 12-foot wide path and appropriate thickness and sub-base requirement.

Width. The primary trail width should be a minimum of 10 feet, with12 feet recommended in high use areas for two-directional travel. A minimum two-foot graded shoulder should be located on each side of the trail. The unpaved trail width should be a minimum of eight feet. In some locations, unpaved trails may be as narrow as four feet when intended for use by equestrians and hikers. In constrained locations or where use is expected to be minimal, the width of the trail may be a minimum of eight feet for two-directional travel, and a minimum of five feet for one-way travel. In general, one-way trails are not advised, as users will tend to use them as two-way trails.

Drainage. The minimum pavement cross slope should be two percent to provide for adequate drainage. Sloping in one direction instead of crowning is preferred, and usually simplifies the drainage and surface construction. A smooth surface is essential to prevent water pooling. This is critical to prevent water from pooling on and channeling down the trail. If the trail traverses the side slope of a hill, the cross slope of the trail surface must be downward from the uphill to the downhill edge of the trail (outslope). This will allow surface water to drain off the edge of the trail rather than running down the length of the trail. The cross slope of such a trail must NOT be downward from the downhill to the uphill edge of the trail (inslope). Such a scenario will result in water channeling down the length of the trail causing extreme levels of erosion.

Landings. Ramps should have top and bottom landings not less than six feet long by the width of the ramp. At least one intermediate landing not less than five feet long by the width of the ramp should be provided for every 30 inches of rise. No ramp shall change direction between landings with an inside radius less than 30 feet. For slopes over five percent, landings are required every 30 feet per ADA guidelines. However, this combination of slopes over five percent and landings every 30 feet can result in a rough trail for users traveling at speeds in excess of 10 miles per hour (especially asphalt paths, where landings are difficult to see). It is therefore best to design trails at five percent or less slope if the trail or section of trail is to meet ADA guidelines.

Expansion and Construction Joints. Expansion and construction joints should have a width of not more than one-half inch. Expansion joints should be filled with a firm, compressible, elastic material, and should be flush with the surface.

Hazards. Any portion of the edge of the trail which is more than eight inches above grade, or which abuts a hazardous area, should be provided with a protective railing with a top rail at a height of 36 inches and a mid-rail at a height of 18 inches.

Handrails. Ramps which slope more than 1:20 should be provided with handrails on both sides at a height of not less than 32 inches nor more than 36 inches, and should extend not less than 12 inches beyond the top and bottom of the ramp. The hand grip portion of handrails should be not less than 1 ¼ inches nor more than two inches in outside dimension. Handgrips should be basically oval or round in cross-section and should have smooth surfaces with no sharp corners. When wall-mounted, handrails should have not less than 1 ½ inches clearance from the wall. Handrails should not be required at any point of access along the ramp, nor at any curb cut.

Design Speed. The paved primary trail facility should be designed for a minimum design speed of 20 miles per hour. However, when the grade exceeds four percent, or where strong prevailing tailwinds exist, a design speed of 30 miles per hour is advisable.

Sight Distance. Trails should be designed with adequate stopping sight distances for bicyclists, based on AASHTO, ADOT Arizona Bicycle Facility Design Guidelines, and/or other guidelines approved by the responsible jurisdictions.

Horizontal Curvature. The horizontal curvature for 20 miles per hour should be 95 feet. The horizontal curvature for 30 miles per hour shall be 250 feet based on design guidelines referenced above.

Clearance. The vertical clearance to obstructions should be a minimum of 10 feet in height. However, vertical clearance in undercrossings and tunnels for the passage of maintenance vehicles and equestrians should be a minimum of 12 feet in height.

Vegetation. Vegetation should not exceed a mature height of three feet within a three-foot distance of the trail surface; trees and other vegetation may exceed this height outside of the three-foot minimum distance. Low growing shrubs such as bursage and brittlebush present minimal hazard to trail users, and may be acceptable within the clearing limits. The purpose of the vegetation clearing limits is to keep taller, potentially more dangerous plants such as thorny trees and larger cacti a safe distance from the trail. All remaining roots and stumps must be grubbed out of the trail surface to provide a smooth surface. No teddy bear cholla should be located within three feet of the trail surface. This distance may need to be increased on the uphill side of trails

that traverse steep hillsides. This will prevent pieces of cacti from falling onto the trail surface and creating a safety hazard. Plants should not be placed in a manner tha creates hiding places, so as to enhance the security of trail users.

Obstacles. Obstacles to the trail such as fire hydrants, light poles, fence posts, protective railings, and bridge abutments should be a minimum of three feet from the trail surface. All temporary construction debris or obstacles should be signed and primary trail access re-routed away from construction areas as necessary.

Signage and Marking. On paved trails, a four-inch wide yellow centerline stripe to separate opposite directions of travel should be used in active use areas, on curves, trail area, and at trail connection nodes. Experience has found that asphalt beneath painted areas can actually deteriorate at a much faster rates than unpainted asphalt surfaces. Signage to indicate directions, destinations, distances, and names of crossing streets should be used in the same manner as they are used on highways. Signage should be provided at a pedestrian scale, as allowed by the Manual on Uniform Traffic Control Device (MUTCD), except in some higher hazard locations where trails intersect with roadways. Standard (vehicular scale) signage should be used in these critical areas, as well as to announce trail crossings to drivers and trail users. Signage in conservation areas should be located at trailheads and intersections. Special signage for equestrian users should be desinged to accommodate the appropriate height limitations.

Signs should also identify the trail type so potential users may judge reasonable expectations for each specific segment of the trail. Signage should be readable from the trail, but should not obstruct it. Signs should also be consistent with local sign types, where applicable. (See "Signage" section below, for an explanation of sign types.)

Lighting. Lighting should be used to reduce conflicts along trails and at intersections where it is considered necessary. If appropriate, lighting should be considered where riding at night is expected, such as trails that serve students or commuters, and at highway intersections. Lighting should be considered in underpasses or tunnels, to enhance nighttime security. Lamp placement shold reinforce the direction of travel, reduce glare, and minimize dense shadows. Flashing warning lights should also be provided to warn trail users when flood conditions exist. Lighting at trail access points integrated into bollards or adjacent to trail gateway areas is critical for the safety of users.

Depending on the location, average maintained horizontal illumination levels of 0.5 foot-candle to two- foot candles should be considered. Luminaries and standards should be at a scale appropriate for a pedestrian or bicycle trail, staging areas with vehicle parking, and at roadway intersections.

Restriction of Motor Vehicle Traffic. The trail should have a physical barrier and signage at highway intersections to prevent unauthorized motor vehicles from using the facilities. Provisions should be made for a lockable, removable post in the center of trails to permit entrance by authorized vehicles. The post should be permanently reflectorized for nighttime visibility and painted a bright color for improved daytime visibility. Where more than one post is used, a five-foot spacing is required. Posts should not be located directly in the expected travel path of trail users, and advanced warning signage is highly recommended. A clear minimum sight distance of 40 feet to the post from each direction of travel should be provided.

Structures. Structures along the trail may include overpasses, underpasses, small bridges, drainage facilities and facilities on a highway bridge or at railroad crossings. These are necessary to provide continuity to the trail. Structures should be extended a minimum of three feet to each side of the trail, and barrier railing should be provided between trail and structure where recommended per AASHTO and other accepted guidelines. Support facilities for trails, such as public restrooms, benches, and parking areas must be constructed to meet accessibility standards. Design standards are to be adhered to in all aspects of trail design so as to assure the quality experience for all trail users on a universal and equal level

Bridge Retrofitting. Where necessary to retrofit the primary trail facility onto existing highway or roadway bridges, several alternatives should be considered:

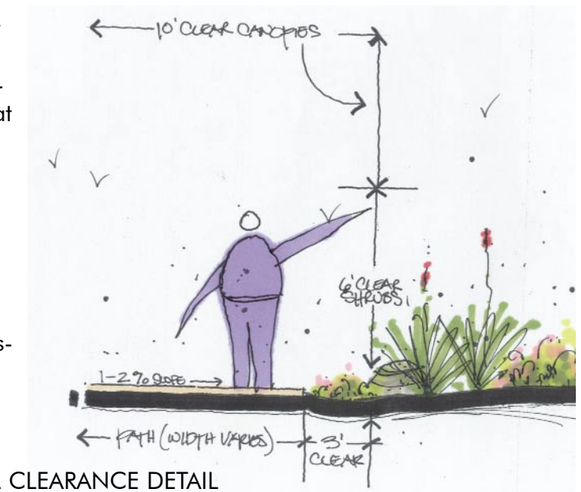
1) Carry the trail across the bridge on both sides, where possible. This can be done where a) the bridge facility will connect to a trail at both ends, b) sufficient width exists on that side of the bridge or can be obtained by widening or restriping lanes and c) provisions are made to physically separate bicycle and other non-motorized traffic from motor vehicle traffic as discussed above. The roadway width on the bridge should not be narrowed in order to construct the trail connection unless 15-foot wide curb lanes or bicycle lanes can be maintained on the bridge.

2) Provide either wide curb lanes or bicycle lanes over the bridge. This may be advisable where a) the trail transitions into bicycle lanes at one end of the bridge, and b) sufficient width exists or can be obtained by widening or restriping. This guideline must be applied carefully, as the trail must be designed and signed in the appropriate manner to direct bicyclists and other users to the appropriate side of the roadway to continue their travel across the bridge. Unless designed correctly, bicyclists traveling opposed to traffic while on the trail will continue their wrong-way travel across the bridge in the bicycle lane, contrary to local, state law and the Uniform Vehicle Code.

3) Use existing sidewalks as one-way or two-way facilities. This may be advisable where a) conflicts between bicyclists and pedestrians will not exceed tolerable limits and b) the existing sidewalks are adequately wide. Under certain conditions, the bicyclist may be required to dismount and cross the structure as a pedestrian, particularly if other pedestrians are present.

Because of the large number of variables involved in retrofitting bicycle facilities onto existing bridges, compromises in desirable design criteria are often inevitable. Therefore, the width to be provided is best determined by the designer, on a case-by-case basis, after thoroughly considering all the variables. If, for any reason, a shared-use trail facility is designed as under-sized, it is critical that the area be signed appropriately to warn trail users and motorists of such conditions. Refer to the MUTCD for signage & marking requirements.

Railings. Railings, fences, or barriers on both sides of the trail should be a minimum of 4.5 feet high. Smooth rub rails shall be attached to the barriers at handlebar height of 3.5 feet. Railing height may be higher for equestrian use areas along river banks or at bridge crossings.



PRIMARY TRAIL CLEARANCE DETAIL

Trail Type	Grade	Surface	Width	Drainage	Vertical Clearance	Horizontal Clearance	Obstacles	Signage & Markings	Lighting	Railings
1) Primary Trail	5% or less	asphalt/concrete with decomposed granite shoulders	10'-12' 2' shoulder each side	2% minimum	10' min	3'	3'	4" striped center line per AASHTO highway guidelines only where necessary on curves and other critical locations	0.5-2' candle	4.5' high
2) Secondary Trail	5% or less	decomposed granite	8'-10' 2' shoulder each side	3%-5%	10' min	3'	3'	4" striped center line per AASHTO highway guidelines	trailhead/ trail connector locations only	4.5' high
3) Neighborhood/ Transit/Connector Trail	5% or less	asphalt/concrete or concrete	8'-10' 2' shoulder each side	3%-5%	10' min	3'	3'	4" striped center line per AASHTO highway guidelines	0.5-2' candle	4.5' high
4) Conservation/ Interpretive Trail	5% or less	decomposed granite or sand/gravel	4'-6'	6%-10%	8' min	3'	3'	at trailheads only	trailheads only 0.5-2' candle	4.5' high hazardous areas only
5) Equestrian Corridor	5% or less	decomposed granite or sand/gravel	varies	3%-5%	12' min	3'	3'	per equestrian trail design guidelines	trailhead/ staging areas only	4.5' high

TABLE 3. DESIGN GUIDELINES MATRIX

Public Art

Public artists and public artworks, as integrated art forms or stand-alone sculptural works can add interest and entertainment to the West Valley Rivers Multi-Modal Trail Project. This section describes how public art may be integrated into the design of a trail system and how public artists may become involved in the planning, design, and implementation process of the trails system. This document also provides examples where artwork may be installed along the trail, such as at sites (gateways and plazas), and at structures, (bridges, bus shelters and retaining walls).

Public art is artwork that is accessible to the public whether privately or publicly funded and maintained. Examples of public art include sculpture, murals, kinetic art, monumental art and environmental art. Traditionally, public art has been displayed in the form of sculpture for parks and plazas. In recent decades, public art has also become integrated into functional structures such as river embankments, bridges, walls and amenities.

Goals and Benefits

The goals of including public art in trail systems are:

- to develop a unique multi-modal trail by making public art an integral design element
- to encourage communities to include artists as design team members early in the design process
- to add greater meaning for the trail user and express local culture and aesthetic value
- to define the New River and Lower Agua Fria River Corridor as a signature destination in the West Valley
- to provide examples of public art opportunities along the trail corridor
- to provide strategies for implementing public art along the trail in communities that currently do not have a public art program

PATRICK PARK PLAZA BY JODY PINTO, 30TH STREET AND SOUTHERN AVENUE IN PHOENIX, ARIZONA

There are many benefits to including public art as an integral design element in the New River and Lower Agua Fria River Corridor including:

- Public art increases tourism and economic development by attracting visitors to see the trail and surrounding places of interest
- Public art adds beauty and interest to the trail, which encourages trail use as an alternate mode of transportation and recreation
- Public art provides focal point, resting spots and a sense of place for pedestrians, cyclists and equestrians who use the trail
- Public art educates by reflecting historical, cultural and social ideas
- Public art fosters community pride and ownership of the trail by providing a venue for residents to express themselves by participating in the public art process

HOHOKAM BIRDS BY BOB HAOZOUS, SKY HARBOR INTERNATIONAL AIRPORT PARK AND RIDE SHUTTLE LOT IN PHOENIX, ARIZONA

Artists often have the ability to view a site or structure in ways not otherwise envisioned. Therefore, engaging artists early in the design process allows artistic concepts and treatments to be integrated into the design plan. Public art responds to environmental factors and community personalities of a site. Involving artists early in the design process has been shown to produce more cohesive, dynamic and cost effective development projects.

Public Art Sites and Structures

The public art sites provided in this document are examples of what can be done artistically along the Corridor. These examples come from Arizona, California, Chicago, Boston and other locations. The examples of sculptures, plazas, wall treatments, paving and other public art media are provided as a launching pad for individual ideas from communities adjacent to the New River and Lower Agua Fria River. A wide range of public art possibilities exist from installing simple plasma-cut railings, to constructing elaborate, custom-designed bridges. The communities along the New River and Lower Agua Fria River will help to define public art for their sections of the trail that meets community goals.

Public Art Programs

Establishing a public art program in communities adjacent to the trail enables these communities to express their ideas and collective identity in artworks along the trail corridor. Neighborhood residents can offer ideas, personal items, and sometimes even hands-on work to the construction of public art projects. This process provides residents a personal stake in the artwork and the trail project, and has been shown to unite neighborhoods, build friendships, mitigate vandalism and foster community pride.

Many communities across the nation currently maintain active public art programs. In the West Valley, communities such as Phoenix, Glendale and Peoria are leaders in developing and maintaining public art programs for their communities. A new project such as the New River and Lower Agua Fria River Corridor can easily be added to their list of public art projects so that implementation of public art can begin.

Public art preserves individual and community identity along the trail. This preservation gains personal and historical significance as time goes by and is one way a community will be known to future generations. Public art programs facilitate this important component of trail design.

DUNLAP AVENUE STREETSCAPE BY KEVIN BERRY,
DUNLAP AVENUE FROM CENTRAL AVENUE TO
7TH STREET IN PHOENIX, ARIZONA

Public Art Locations

Public art along the trail may be located at gateways and staging areas, or may be designed as part of structures such as bridges, walls and bus shelters. Public art should be planned for sites that are highly visible to the public and in sites that are important to the community.

Public Art Characteristics

Public art should respond to the unique characteristics of the river corridor and should be durable, safe, easy to maintain and well crafted. Public art should also respond to the following factors:

- the varying landscape terrains ranging from undeveloped, open spaces to developed urban areas,
- the hot and arid climate,
- water and its significance to the region,
- desert vegetation,
- shade, or lack of shade,
- historical and cultural aspects of the region, and
- social ideals of nearby communities.

DREAMY DRAW PEDESTRIAN BRIDGE
BY VICKI SCURI,
SQUAW PEAK HIGHWAY AT 29TH STREET
IN PHOENIX, ARIZONA

Public Art Concepts

The public art sites in this document are based on the following concepts:

- The public art sites shown are provided as examples, rather than as directives. Art by its very nature offers unlimited possibilities in location, configuration, materials, content, and technique. Communities are encouraged to express their own creativity through the public art process.
- Artists engaged early in the design process will often have unique ideas for site options and should be encouraged to seek the most suitable sites.
- Public art should challenge our vision, expand our view of the world, and encourage us to think beyond our own experience.
- Public art should move beyond embellishment into meaningful content.
- Public art should offer various opportunities for residents to participate in the public art process.

Signage

Trail signage and pavement markings are critically important considerations in the design and implementation of trails for the West Valley Rivers Corridor. A variety of sign types shall be incorporated into the comprehensive system of trails as a means to ensure the safety of all trail users.

There are five different sign types recommended for the trail system, including the monument entry, wayfinding/directional, regulatory, interpretive and mile marker signage concepts. At every primary staging areas/gateway along the trail Corridor, there should be adequate signage to inform trail users of the rules and regulations governing the trail system, as well as outlining proper trail etiquette for all trail users.

Signage text should be in both English and Spanish where possible, and should be at a large enough point size to be read by those with visual impairments. Signage should be readable from the trail, but should not obstruct it. Signage could incorporate the "West Valley Rivers" masthead logo and six small color icons of each local jurisdiction and land management agency to create a regional identity for the trail system, yet be consistent with local sign types, as previously mentioned. Signage should also provide user guidelines indicating the preferred modes of use in all trail areas.

The **monument entry or gateway** sign identifies a main entrance point to the New River and Lower Agua Fria River Corridor. These signs should be constructed out of sandblasted concrete, brick or flagstone. The "West Valley Rivers" project logo may be etched into the concrete, along with the logos of the resident municipality(ies) and/or the Flood Control District of Maricopa County (FCDMC). The approximate dimension of this sign is 12 feet long by four feet high. The estimated cost per monument entry sign is $25,000.00 (based on year 2001 dollars).

A **wayfinding/directional** sign reflects a map of the entire New River and Lower Agua Fria River Corridor and shows the user his or her location within the 42-mile Corridor. This sign should be constructed out of concrete with a flagstone base. Signs should be pre-cast with a recessed map of the entire trail system including major points of interest. The "West Valley River" project logo plus any relevant jurisdictional logos could also be included on the sign. Approximate sign dimensions are six feet high by four feet wide. The estimated cost per wayfinding/directional sign is $10-15,000.00 (based on year 2001 dollars).

Cautionary, informational, and regulatory signage informs trail users of laws or regulations that may not be apparent, operational controls that do not impose any obligations or prohibitions, and cautionary information for specific trail conditions. These signs should be erected wherever necessary along the Corridor. These signs should be metal with reflective adhesive graphics, incorporating the "West Valley Rivers" project logo and jurisdictional logos, if possible. The approximate dimension of these sign types will vary depending on the type of information required. The Manual of Uniform Traffic Control Devices (MUTCD) provides a comprehensive set of standards for regulatory, cautionary, and informational type signs, color codes, and sizes. for a rectangular sign; other shapes will vary in size. The estimated cost per sign is $300.00.

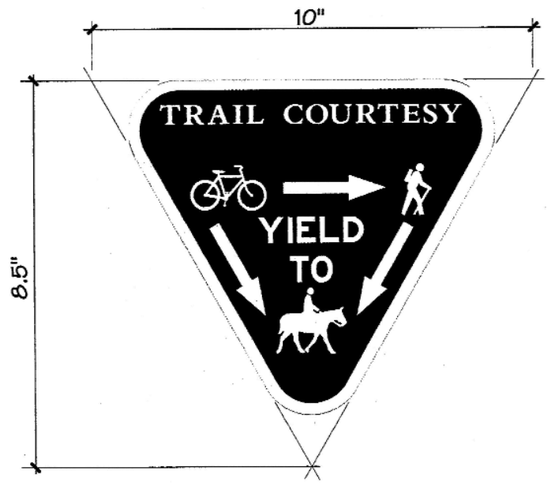
MONUMENT ENTRY SIGN

WAYFINDING/DIRECTIONAL SIGN

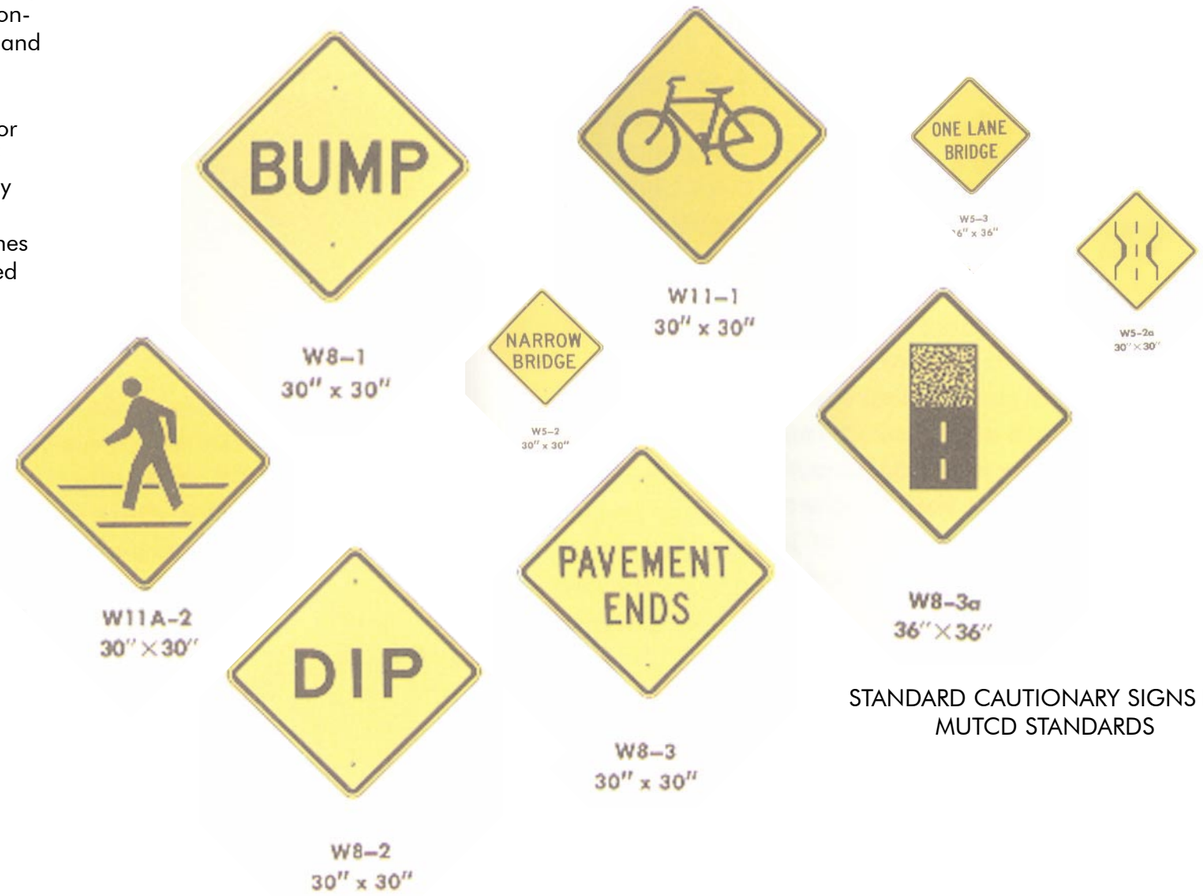
DESIGN GUIDELINES

An **Interpretive** plaque denotes an area of interest or of cultural or historical significance. These signs may include photographs or drawings in addition to a text explanation. Plaques should be post-mounted and constructed of copper or aluminum or annodized aluminum for heat and vandal resistance. Sign dimensions and costs will vary, depending on informational content, size, and special considerations.

Pavement markers, such as mile markers or footprints stenciled onto the pavement serve as a guide for trail users in measuring their progress, a means for identifying sections of the trail system, and direction of travel for pedestrians. It is recommended that mileage be posted every one-half mile. Posted markers may blend with other trail signage design showing mileage traversed, or may utilize Manual on Uniform Traffic Control Devices (MUTCD) milepost sign standards for low volume, low speed roads (six inches by nine inches for small size posts excluding the word "MILE"). Costs and dimensions of this sign type may vary. For paved trail areas, mileage may also be painted on the trail surface in lieu of a posted sign.



STANDARD SHARED-USE TRAIL CONCEPT SIGN



STANDARD CAUTIONARY SIGNS PER MUTCD STANDARDS

STANDARD TEMPORARY WARNING SIGNS PER MUTCD STANDARDS

STANDARD INFORMATIONAL SIGNS PER MUTCD STANDARDS

Conclusions and Recommendations

Plan Implementation

The Implementation Strategies Action Plan (Action Plan) serves as both a stand-alone document and a supplement to the West Valley Multi Modal Transportation Corridor Plan-a component of the West Valley Recreation Corridor. The Action Plan outlines several strategies and funding sources for the implementation of the proposed 42-mile, shared-use trail network to be developed for bicyclists, pedestrians, equestrians, physically challenged persons and other non-motorized trail users in the West Valley. Because this trail corridor falls within several different jurisdictions (incorporated cities) and land management agencies (state and local), it is critical that a regional and community partnering approach be a foremost fundamental consideration if the West Valley Multi-Modal Corridor Project is to become a reality.

The MAG West Valley Multi-Modal Transportation Corridor Plan identifies a multi-phased development approach for the implementation of a long-tem trails program including design goals. The three steps below describe a progression for the philosophy and mission of a public trial network for the New River and Lower Agua Fria River Corridor.

Step One:

Identify the vision and basic trail design concepts that will shape the overall character of the New River and Lower Agua Fria River (the MAG West Valley Multi-Modal Transportation Corridor Plan).

Step Two:

Establish trail operation and maintenance guidelines, potential funding sources, implementation strategies and actions tied to specific trail segments developed as a part of the Corridor Plan, define management responsibilities and trail design goals for the entire Corridor system (the Implementation Strategies Action Plan).

Step Three:

Determine funding sources for each corridor segment, obtain necessary clearances, and complete individual recommendations and development plans, including specific land acquisition, design and construction criteria outlined for each trail segment defined in the Corridor Plan (future planning and implementation phase).

Planning Issues

The main issues affecting the development of the New River and Lower Agua Fria Corridor are:

- User conflicts;
- Establishing set-asides or easements for the development of the trail system;
- Mitigation and access at blighted land use areas, especially sand and gravel operations;
- Public access on Flood Control District of Maricopa County (FCDMC) rights-of-way;
- Engineering redesign and cost implications associated with retrofitting existing bridge structures;
- Developing acceptable design guidelines for new bridge structures; and
- Providing irrigation (reclaimed water, if possible) to planting areas along the trail.

Policy Recommendations

Nine Steps to Implement the West Valley Rivers Trail Project

Step #1 Local Governments Should Support the Trails Initiate by Formal Adopted Resolution.

Each governing jurisdiction located within the West Valley Rivers region can formally acknowledge their support to partner with other communities and governing agencies to assure the implementation of the New River and Lower Agua Fria River Multi-Modal Trail system.

Each mayor and council representing local communities within the West Valley River region, and other land management and resource agency can develop formal resolutions to acknowledge full support for the implementation through positive public relations, media support, staff support, and funding for the West Valley River Project. Each resolution should acknowledge support for the creation of a Trails Advisory Committee to specifically implement this plan, and the partnership between agency staff and non-profit support programs such as a proposed West Valley Rivers Alliance to assure the implementation of the West Valley Rivers Multi-Modal Trails system.

Step #2 Local Jurisdictions Work Collaboratively with Clearly Defined Intergovernmental Agreements.

Local government support is essential in the development and implementation of the West Valley River Project. If the West Valley trails project is to become a reality, full coordination and cooperation will be paramount in the initial stages and continuing phases of the West Valley River Project. Each local jurisdiction within the West Valley River Corridor-Avondale, Glendale, Goodyear, Peoria, and Phoenix, along with Maricopa County, the Flood Control District, Arizona Department of Transportation and state land managers should enter into intergovernmental agreements. The intergovernmental agreements will outline key department staff roles and responsibilities, clarification of trail access policy for flood control and other public land holdings, funding expectations, and project phasing and management roles. The intergovernmental agreements should also foster the concept of supporting any number of non-profit, community based efforts to encourage the development of the West Valley Rivers trails program.

Step #3 Leverage Funding from a Variety of Sources through Capital Improvement Program (CIP) and Bond Funding Programs with Flood Control District and Private Development Participation.

Each local jurisdiction should include the West Valley Rivers Multi-Modal trail land acquisition, design and construction phasing funding for priority trail segments in their local annual Capital Improvement Programs (CIP). Funding can be secured from a variety of sources as described in the Action Plan – companion document to this Plan. The trails program should be coordinated and clearly defined in each jurisdictions annual budget programs for both parks and recreation and transportation department CIPs.

Each jurisdiction should also include the West Valley Rivers trails program in future trail bond funding programs to ensure that a range of trails funding alternatives are pursued in order to implement the trails program.

Private sector development should also contribute to the development of the West Valley Rivers Trail program by dedicating rights-of-way or conservation or trails easement set asides, or designing and building trail segments as a part of the subdivision or development review process.

Step#4 Initiate Appropriate Policy Changes to Allow Public Access on Urban Flood Control and Other State Owned Lands.

The Flood Control District of Maricopa County, the Bureau of Land Management, the State of Arizona, and local jurisdictions should strive to change current policy limiting public access to existing linear corridors such as flood ways, drainage and utility easements, or to the public lands to allow for legal trail access for the general public. These rights-of-way easement corridors will require changes to improve public safety, such as protective guardrails, access ramps, and adequate clearances to physical objects that may cause harm to trail users. However, legal trail access through policy changes must occur first in order to allow each jurisdiction to plan and program for required public safety improvements along trails.

Step #5 Establish a West Valley River Trails 'champion' by Supporting Public Efforts as Partnerships.

Any number of trails special interest groups can be empowered with the help of local jurisdictions to provide a key role in developing and implementing the West Valley Rivers Trails Project. Public efforts designed to recognize and encourage the roles of the public are absolutely necessary to garner support for the development of these complex river trails projects.

A champion could take the form of a formal or informal group such as a non-profit West Valley Rivers Alliance. The efforts of key stakeholders in the community, such as John F. Long, and a range of environmental, recreational, neighborhood groups can be leveraged to increase support for and implement the trail system. Events such as the Arbor Day tree planting, sponsored by a variety of public and non-profit groups in April, 2001 is an excellent example of how local level initiatives can help begin to gain momentum in an effort to produce positive public relations and grassroots support in the community.

Step #6 Ensure Consistency in Trail System Design Throughout the Entire Corridor.

In order to minimize liability to jurisdictions, the West Valley Rivers trail system design must conform to the established design guidelines established by AASHTO (American Association of State Highway Transportation Officials), the MUTCD (Manual of Uniform Traffic Control Devices) standards for signage, and Arizona Department of Transportation (ADOT) guidelines for bicycle and pedestrian facilities. Each jurisdiction responsible for the implementation of a specific trail segment must coordinate with adjacent jurisdictions to assure the safety of trail users is met and/or exceeded.

Step#7 Fulfill the Vision of the Master Plan and by Following the Implementation Strategies Action Plan.

The West Valley Multi-Modal Transportation Corridor Master Plan outlines the Vision and the Plan for a comprehensive system of trails designed for non-motorized transportation purposes. While the Master Plan sets the stage for implementation, the Implementation Strategies Action Plan (Action Plan) describes how to complete the Plan. The Action Plan supports the Master Plan by defining specific methods and strategies to identify phasing and implementation strategies, funding alternatives and key roles and responsibilities for this long-term, multi-jurisdictional trail project.

Step #8 Create an Ongoing Operational and Maintenance Program throughout the West Valley River Corridor.

Ongoing operational and maintenance programs, established by each responsible jurisdiction along the West Valley River trails system, will ensure the safety of trail users, minimize the liability for local governments, and enhance the quality and livability of the communities along the trail system. Trail operational and maintenance budget requirements can be defined in each jurisdiction's operations department and police/sheriff department annual operating programs. Cost sharing agreements for ongoing operational programs can be defined in the intergovernmental agreements and reflected in the annual operation budgets for each jurisdiction.

Step #9 Conduct Evaluations of Key Programs, Completed Trail Segments and Ongoing Processes for each Phase of Trail Development.

Each component of the West Valley River Trails project should be evaluated on an ongoing process by a Trails Advisory Committee in conjunction with the regional trails planner and local jurisdictional support staff from each affected community in the West Valley River region. Other land management and resource agencies should develop formal resolutions to acknowledge full support for the implementation through positive public relations, media support, staff support and funding for the West Valley River Project. Each resolution should acknowledge support for the creation of a Trails Advisory Committee to help implement this plan and coordinate regional trails planning efforts. Resolutions should also support the partnership between agency staff and non-profit support programs such as the proposed West Valley Rivers Alliance to assure the implementation of the West Valley Multi-Modal Transportation Corridor trails system.

General Trail Policies:

1. Trails shall be planned, sited, and designed in collaboration with trail interest groups and area property owners and residents, and elected officials.
2. For primary trails, the typical width shall be 12 feet but no less than 10 feet. The width of all other paved trails should be a minimum of 10 feet for two-way travel and the width of an unpaved trail should be a minimum of 8 feet for two-way travel. All trails should be designed to accommodate two-way travel.
3. All-terrain vehicle (ATV) use of trail should be prohibited and restricted through physical measures, signage, and other means.
4. All physical measures should be taken to protect and provide security for adjacent private and public property and trail users while also providing reasonable access points to trails. Safety measures should be consistent with Crime Prevention Through Environmental Design (CPTED) principles.
5. Eligible trail users on unpaved sections of trail include equestrians, pedestrians (including persons in wheelchairs, where feasible) and bicyclists, and on paved sections of trail include pedestrians (including persons in wheelchairs), bicyclists, rollerbladers, scooters, skateboarders, and other persons using non-motorized means of travel
6. All primary trail sections should be designed to Americans with Disabilities Act (ADA) standards. All other trails should be designed to ADA standards where feasible, unless prevented by topographic constraints.

7. Encourage non-motorized linkages to the primary trail within urban areas at intervals no greater than one-quarter mile.
8. Trails should be designed and constructed to provide for efficient maintenance practices. Maintenance should be proactive as well as responsive to trail user requests. Inspection and maintenance of trails should be conducted on a monthly basis and in response to maintenance requests. Funding for maintenance activities should be provided at levels to maintain trails at near-new (i.e., high-standard) conditions.
9. Trails should be designed to optimize opportunities for shade to address use of trails during summer months.
10. Rest areas and water are recommended at reasonably close intervals in urbanized areas (i.e., one-half mile) and/or where they could be incorporated ito existing adjacent commercial development. Rest rooms should be provided where feasible within urban areas, if possible at intervals no greater than one mile. Rest areas, drinking water, and rest rooms should be provided at staging areas in non-urbanized areas and at other non-urbanized locations along the trails as feasible.
11. Staging areas and parking lots should be provided as feasible in urban areas, ideally at intervals no greater than two miles. Staging areas and parking lots should be provided in non-urbanized areas at trail crossings of arterial and collector roadways, and at other locations as feasible.
12. Staging areas and parking lots in urbanized areas should be paved with non-permeable or semi-permeable surfaces to help control dust and erosion. To the degree feasible, staging areas in non-urbanized areas should also be paved with non- or semi-permeable surfaces. Appropriate surface materials should be provided for equestrian activities at staging areas.
13. Environmental impacts from trail construction and maintenance activities should be mitigated through revegetation and screening.
14. Shaded plazas, public art and landscaping should be provided along the trails to the extent feasible. Amenities and support facilities are essential to attracting and supporting trail users.
15. All opportunities to link trail use with transit service should be explored to increase trail access and continuity for users.
16. Trail crossings of major roadways should be grade-separated, if feasible. For locations where grade-separation is not feasible or is cost-prohibitive, high-standard design treatments should be pursued to increase trail user safety at these crossings.
17. Where feasible, separate parallel trails should be provided to provide additional space and choice for use of paved or unpaved trail surface.

Equestrian-Specific Policies:

1. Safety should be the primary objective of all planning decisions for equestrian trail users.
2. Planning elements should accommodate the size of a horse and the reach of a mounted rider throughout the project areas.
3. Trail corridors that equestrians share with other non-motorized trail users should be as comparable and compatible in the speed of other users as much as possible.
4. Equestrian trail tread surfaces should be of native soils as much as possible, and free from hard/smooth surfaces, severe slope, rocks, roots, holes, ruts, wire, or other obstacles that would cause a horse to trip, slip, or fall.
5. Line-of-sight along trail corridors and intersections should provide adequate visibility to reduce trail user conflicts and unsafe trail or roadway traffic crossings.
6. Native vegetation should be utilized along trail corridors, as non-native vegetation is frequently toxic to equine species.
7. Whenever safety or budgets will allow, equestrian trail users should be provided underpasses or tunnels to avoid conflicts and safety hazards with motorized traffic.
8. Signage should provide user guidelines equestrian use in multi-modal recreation corridors.

Landscape Policy Statements:

1. Plant materials should be inspected frequently for signs of infestation, disease and loss of vigor.
2. Adequate barriers around landscape areas should be provided during operation of maintenance or construction equipment.
3. Plant materials damaged by fire, weather or mechanical means should be removed offsite immediately after the damage has been identified.
4. New plant materials should be inspected for signs of insect infestation or disease upon delivery to the site. If possible, new materials should be quarantined for three weeks prior to installation.
5. Weeds should be controlled by hand removal or by used of accepted herbicides.
6. Trees and shrubs should be watered as necessary to maintain active, vigorous growth. Infrequent deep watering is better than frequent shallow watering. Percolation of water deep into the soil will encourage roots to grow deeper rather than come to the surface.
7. Canopy tree branches should be thinned periodically, especially until a strong root system is developed.

EXAMPLES OF SONORAN DESERT VEGETATION

APPENDICES

DETAILED COST ESTIMATES

TRAIL SEGMENT: N-1

Trail Type

PRIMARY TRAIL					Secondary Trail					Neighborhood/Transit/Connector Trail				
ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total
12' wide asphalt/concrete	548,916	SF	$ 1.75	$ 960,603	8' wide stabilized decomposed granite	344,536	SF	$ 0.35	$ 120,588	8' wide asphalt/concrete	196,072	SF	$ 1.75	$ 343,126
Accent concrete/paving at nodes	770	SF	$ 4.00	$ 3,080	Accent concrete/paving at nodes	233	SF	$ 4.00	$ 932	Informational/directional signage	1	EA	$ 2,000.00	$ 2,000
Site/seat wall (20" High x 8" Wide)	53	LF	$ 100.00	$ 5,300	Site/seat wall (20" High x 8" Wide)	16	LF	$ 100.00	$ 1,600	Lighted bollards	2	EA	$ 1,500.00	$ 3,000
Trash Receptacle	5	EA	$ 400.00	$ 2,000	Trash Receptacle	1	EA	$ 400.00	$ 400	15 Gallon Trees	4	EA	$ 125.00	$ 500
Drinking Fountain	5	EA	$ 1,500.00	$ 7,500	Drinking Fountain	1	EA	$ 1,500.00	$ 1,500	5 Gallon Shrubs	18	EA	$ 20.00	$ 360
Informational/directional signage	5	EA	$ 2,000.00	$ 10,000	Informational/directional signage	1	EA	$ 2,000.00	$ 2,000	1 Gallon Groundcover	27	EA	$ 10.00	$ 270
Lighted bollards	9	EA	$ 1,500.00	$ 13,500	Lighted bollards	3	EA	$ 1,500.00	$ 4,500	Drip irrigation	164	SF	$ 0.50	$ 82
15 Gallon Trees	18	EA	$ 125.00	$ 2,250	15 Gallon Trees	6	EA	$ 125.00	$ 750					$ -
5 Gallon Shrubs	92	EA	$ 20.00	$ 1,840	5 Gallon Shrubs	8	EA	$ 20.00	$ 160					$ -
1 Gallon Groundcover	139	EA	$ 10.00	$ 1,390	1 Gallon Groundcover	42	EA	$ 10.00	$ 420					$ -
Drip irrigation	832	SF	$ 0.50	$ 416	Drip irrigation	252	SF	$ 0.50	$ 126					$ -
Boulders	37	EA	$ 325.00	$ 12,025	Boulders	11	EA	$ 325.00	$ 3,575					$ -
Decomposed Granite	832	EA	$ 0.25	$ 208	Decomposed Granite	252	EA	$ 0.25	$ 63					$ -
SUB-TOTAL			TOTAL	$ 1,020,112	SUB-TOTAL			TOTAL	$ 136,614	SUB-TOTAL			TOTAL	$ 349,338

Trail Type

Conservation/Interpretation Trail					Equestrian Corridor					*Trail Element* Corridor Prototype Designs				
ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total
4' wide stabilized decomposed granite	29,316	SF	$ 0.35	$ 10,261	4' wide cleared/improved corridor	121,012	SF	$ 0.05	$ 6,051	Gateway	1	EA	$ 51,625	$ 51,625
Accent concrete/paving at nodes	58	SF	$ 4.00	$ 232					$ -	Primary Staging Area/Gateway	3	EA	$ 326,340	$ 979,020
Site/seat wall (20" High x 8" Wide)	4	LF	$ 100.00	$ 400					$ -	Secondary Staging Area	1	EA	$ 64,190	$ 64,190
Trash Receptacle	1	EA	$ 400.00	$ 400					$ -	Trail Connection	7	EA	$ 30,334	$ 212,338
Drinking Fountain	1	EA	$ 1,500.00	$ 1,500					$ -	Riverbed Access Ramp	2	EA	$ 50,000	$ 100,000
Informational/directional signage	1	EA	$ 2,000.00	$ 2,000					$ -	Future Roadway Bridge	3	EA	*	
Lighted bollards	1	EA	$ 1,500.00	$ 1,500					$ -	Prefabricated Pedestrian Bridge	2	EA	$ 1,500,000	$ 3,000,000
15 Gallon Trees	2	EA	$ 125.00	$ 250					$ -	Transit Connection Node	0	EA	$ 55,103	$ -
5 Gallon Shrubs	7	EA	$ 20.00	$ 140					$ -	Trail Underpass Improvements	4	EA	$ 500,000	$ 2,000,000
1 Gallon Groundcover	11	EA	$ 10.00	$ 110					$ -	At-Grade Primary Trail Crossing	0	EA	**	varies
Drip irrigation	63	SF	$ 0.50	$ 32					$ -					
SUB-TOTAL			TOTAL	$ 16,824	SUB-TOTAL			TOTAL	$ 6,051	SUB-TOTAL			TOTAL	$ 6,407,173

NOTE: All primary trail costs for the New River and Lower Agua Fria River Corridor trail segments are based on recommended, typical 12-foot wide trail. These costs are based on year 2001 figures.

SEGMENT 1 APPROXIMATE TOTAL	TOTAL	$7,906,000

* Not included in costs

** Cost will vary by location and local preference (pavement/trail markings and signage vs. signaliziation)

TRAIL SEGMENT: N-2

Trail Type

PRIMARY TRAIL					Secondary Trail					Neighborhood/Transit/Connector Trail				
ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total
12' wide asphalt/concrete	484,956	SF	$ 1.75	$ 848,673	8' wide stabilized decomposed granite	203,480	SF	$ 0.35	$ 71,218	8' wide asphalt/concrete	225,440	SF	$ 1.75	$ 394,520
Accent concrete/paving at nodes	770	SF	$ 4.00	$ 3,080	Accent concrete/paving at nodes	233	SF	$ 4.00	$ 932	Informational/directional signage	1	EA	$ 2,000.00	$ 2,000
Site/seat wall (20" High x 8" Wide)	53	LF	$ 100.00	$ 5,300	Site/seat wall (20" High x 8" Wide)	16	LF	$ 100.00	$ 1,600	Lighted bollards	2	EA	$ 1,500.00	$ 3,000
Trash Receptacle	5	EA	$ 400.00	$ 2,000	Trash Receptacle	1	EA	$ 400.00	$ 400	15 Gallon Trees	4	EA	$ 125.00	$ 500
Drinking Fountain	5	EA	$ 1,500.00	$ 7,500	Drinking Fountain	1	EA	$ 1,500.00	$ 1,500	5 Gallon Shrubs	18	EA	$ 20.00	$ 360
Informational/directional signage	5	EA	$ 2,000.00	$ 10,000	Informational/directional signage	1	EA	$ 2,000.00	$ 2,000	1 Gallon Groundcover	27	EA	$ 10.00	$ 270
Lighted bollards	9	EA	$ 1,500.00	$ 13,500	Lighted bollards	3	EA	$ 1,500.00	$ 4,500	Drip irrigation	164	SF	$ 0.50	$ 82
15 Gallon Trees	18	EA	$ 125.00	$ 2,250	15 Gallon Trees	6	EA	$ 125.00	$ 750					$ -
5 Gallon Shrubs	92	EA	$ 20.00	$ 1,840	5 Gallon Shrubs	8	EA	$ 20.00	$ 160					$ -
1 Gallon Groundcover	139	EA	$ 10.00	$ 1,390	1 Gallon Groundcover	42	EA	$ 10.00	$ 420					$ -
Drip irrigation	832	SF	$ 0.50	$ 416	Drip irrigation	252	SF	$ 0.50	$ 126					$ -
Boulders	37	EA	$ 325.00	$ 12,025	Boulders	11	EA	$ 325.00	$ 3,575					$ -
Decomposed Granite	832	EA	$ 0.25	$ 208	Decomposed Granite	252	EA	$ 0.25	$ 63					$ -
SUB-TOTAL			TOTAL	$ 908,182	SUB-TOTAL			TOTAL	$ 87,244	SUB-TOTAL			TOTAL	$ 400,732

Trail Type

Conservation/Interpretation Trail					Equestrian Corridor					Trail Element: Corridor Prototype Designs				
ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total
4' wide stabilized decomposed granite	82,612	SF	$ 0.35	$ 28,914	4' wide cleared/improved corridor	212,936	SF	$ 0.05	$ 10,647	Gateway	0	EA	$ 51,625	$ -
Accent concrete/paving at nodes	58	SF	$ 4.00	$ 232					$ -	Primary Staging Area/Gateway	0	EA	$ 326,340	$ -
Site/seat wall (20" High x 8" Wide)	4	LF	$ 100.00	$ 400					$ -	Secondary Staging Area	1	EA	$ 64,190	$ 64,190
Trash Receptacle	1	EA	$ 400.00	$ 400					$ -	Trail Connection	4	EA	$ 30,334	$ 121,336
Drinking Fountain	1	EA	$ 1,500.00	$ 1,500					$ -	Riverbed Access Ramp	0	EA	$ 50,000	$ -
Informational/directional signage	1	EA	$ 2,000.00	$ 2,000					$ -	Future Roadway Bridge	0	EA	*	
Lighted bollards	1	EA	$ 1,500.00	$ 1,500					$ -	Prefabricated Pedestrian Bridge	0	EA	$ 1,500,000	$ -
15 Gallon Trees	2	EA	$ 125.00	$ 250					$ -	Transit Connection Node	0	EA	$ 55,103	$ -
5 Gallon Shrubs	7	EA	$ 20.00	$ 140					$ -	Trail Underpass Improvements	0	EA	$ 500,000	$ -
1 Gallon Groundcover	11	EA	$ 10.00	$ 110					$ -	At-Grade Primary Trail Crossing	0	EA	**	varies
Drip irrigation	63	SF	$ 0.50	$ 32					$ -					
SUB-TOTAL			TOTAL	$ 35,478	SUB-TOTAL			TOTAL	$ 10,647	SUB-TOTAL			TOTAL	$ 185,526

NOTE: All primary trail costs for the New River and Lower Agua Fria River Corridor trail segments are based on recommended, typical 12-foot wide trail. These costs are based on year 2001 figures.

SEGMENT 2 APPROXIMATE TOTAL	TOTAL	$1,628,000

* Not included in costs

** Cost will vary by location and local preference (pavement/trail markings and signage vs. signaliziatic

TRAIL SEGMENT: N-3

Trail Type

PRIMARY TRAIL					Secondary Trail					Neighborhood/Transit/Connector Trail				
ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total
12' wide asphalt/concrete	416,796	SF	$ 1.75	$ 729,393	8' wide stabilized decomposed granite	428,296	SF	$ 0.35	$ 149,904	8' wide asphalt/concrete	208,320	SF	$ 1.75	$ 364,560
Accent concrete/paving at nodes	770	SF	$ 4.00	$ 3,080	Accent concrete/paving at nodes	233	SF	$ 4.00	$ 932	Informational/directional signage	1	EA	$ 2,000.00	$ 2,000
Site/seat wall (20" High x 8" Wide)	53	LF	$ 100.00	$ 5,300	Site/seat wall (20" High x 8" Wide)	16	LF	$ 100.00	$ 1,600	Lighted bollards	2	EA	$ 1,500.00	$ 3,000
Trash Receptacle	5	EA	$ 400.00	$ 2,000	Trash Receptacle	1	EA	$ 400.00	$ 400	15 Gallon Trees	4	EA	$ 125.00	$ 500
Drinking Fountain	5	EA	$ 1,500.00	$ 7,500	Drinking Fountain	1	EA	$ 1,500.00	$ 1,500	5 Gallon Shrubs	18	EA	$ 20.00	$ 360
Informational/directional signage	5	EA	$ 2,000.00	$ 10,000	Informational/directional signage	1	EA	$ 2,000.00	$ 2,000	1 Gallon Groundcover	27	EA	$ 10.00	$ 270
Lighted bollards	9	EA	$ 1,500.00	$ 13,500	Lighted bollards	3	EA	$ 1,500.00	$ 4,500	Drip irrigation	164	SF	$ 0.60	$ 98
15 Gallon Trees	18	EA	$ 125.00	$ 2,250	15 Gallon Trees	6	EA	$ 125.00	$ 750					$ -
5 Gallon Shrubs	92	EA	$ 20.00	$ 1,840	5 Gallon Shrubs	8	EA	$ 20.00	$ 160					$ -
1 Gallon Groundcover	139	EA	$ 10.00	$ 1,390	1 Gallon Groundcover	42	EA	$ 10.00	$ 420					$ -
Drip irrigation	832	SF	$ 0.50	$ 416	Drip irrigation	252	SF	$ 0.50	$ 126					$ -
Boulders	37	EA	$ 325.00	$ 12,025	Boulders	11	EA	$ 325.00	$ 3,575					$ -
Decomposed Granite	832	EA	$ 0.25	$ 208	Decomposed Granite	252	EA	$ 0.25	$ 63					$ -
SUB-TOTAL			TOTAL	$ 788,902	SUB-TOTAL			TOTAL	$ 165,930	SUB-TOTAL			TOTAL	$ 370,788

Trail Type

Conservation/Interpretation Trail					Equestrian Corridor					Trail Element				
ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total	Corridor Prototype Designs				
4' wide stabilized decomposed granite	180,280	SF	$ 0.35	$ 63,098	4' wide cleared/improved corridor	238,828	SF	$ 0.05	$ 11,941	ITEM	Quantity	Unit	Cost per Unit	Total
Accent concrete/paving at nodes	58	SF	$ 4.00	$ 232					$ -	Gateway	0	EA	$ 51,625	$ -
Site/seat wall (20" High x 8" Wide)	4	LF	$ 100.00	$ 400					$ -	Primary Staging Area/Gateway	1	EA	$ 326,340	$ 326,340
Trash Receptacle	1	EA	$ 400.00	$ 400					$ -	Secondary Staging Area	2	EA	$ 64,190	$ 128,380
Drinking Fountain	1	EA	$ 1,500.00	$ 1,500					$ -	Trail Connection	6	EA	$ 30,334	$ 182,004
Informational/directional signage	1	EA	$ 2,000.00	$ 2,000					$ -	Riverbed Access Ramp	1	EA	$ 50,000	$ 50,000
Lighted bollards	1	EA	$ 1,500.00	$ 1,500					$ -	Future Roadway Bridge	0	EA	*	
15 Gallon Trees	2	EA	$ 125.00	$ 250					$ -	Prefabricated Pedestrian Bridge	1	EA	$ 1,500,000	$ 1,500,000
5 Gallon Shrubs	7	EA	$ 20.00	$ 140					$ -	Transit Connection Node	0	EA	$ 55,103	$ -
1 Gallon Groundcover	11	EA	$ 10.00	$ 110					$ -	Trail Underpass Improvements	0	EA	$ 500,000	$ -
Drip irrigation	63	SF	$ 0.50	$ 32					$ -	At-Grade Primary Trail Crossing	0	EA	**	varies
SUB-TOTAL			TOTAL	$ 69,662	SUB-TOTAL			TOTAL	$ 11,941	SUB-TOTAL			TOTAL	$ 2,186,724

NOTE: All primary trail costs for the New River and Lower Agua Fria River Corridor trail segments are based on recommended, typical 12-foot wide trail. These costs are based on year 2001 figures.

SEGMENT 3 APPROXIMATE TOTAL	TOTAL	$3,595,000

* Not included in costs

** Cost will vary by location and local preference (pavement/trail markings and signage vs. signaliziatio

TRAIL SEGMENT: N-4

Trail Type

PRIMARY TRAIL					Secondary Trail					Neighborhood/Transit/Connector Trail				
ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total
12' wide asphalt/concrete	421,044	SF	$ 1.75	$ 736,827	8' wide stabilized decomposed granite	374,216	SF	$ 0.35	$ 130,976	8' wide asphalt/concrete	60,520	SF	$ 1.75	$ 105,910
Accent concrete/paving at nodes	770	SF	$ 4.00	$ 3,080	Accent concrete/paving at nodes	233	SF	$ 4.00	$ 932	Informational/directional signage	1	EA	$ 2,000.00	$ 2,000
Site/seat wall (20" High x 8" Wide)	53	LF	$ 100.00	$ 5,300	Site/seat wall (20" High x 8" Wide)	16	LF	$ 100.00	$ 1,600	Lighted bollards	2	EA	$ 1,500.00	$ 3,000
Trash Receptacle	5	EA	$ 400.00	$ 2,000	Trash Receptacle	1	EA	$ 400.00	$ 400	15 Gallon Trees	4	EA	$ 125.00	$ 500
Drinking Fountain	5	EA	$ 1,500.00	$ 7,500	Drinking Fountain	1	EA	$ 1,500.00	$ 1,500	5 Gallon Shrubs	18	EA	$ 20.00	$ 360
Informational/directional signage	5	EA	$ 2,000.00	$ 10,000	Informational/directional signage	1	EA	$ 2,000.00	$ 2,000	1 Gallon Groundcover	27	EA	$ 10.00	$ 270
Lighted bollards	9	EA	$ 1,500.00	$ 13,500	Lighted bollards	3	EA	$ 1,500.00	$ 4,500	Drip irrigation	164	SF	$ 0.50	$ 82
15 Gallon Trees	18	EA	$ 125.00	$ 2,250	15 Gallon Trees	6	EA	$ 125.00	$ 750					$ -
5 Gallon Shrubs	92	EA	$ 20.00	$ 1,840	5 Gallon Shrubs	8	EA	$ 20.00	$ 160					$ -
1 Gallon Groundcover	139	EA	$ 10.00	$ 1,390	1 Gallon Groundcover	42	EA	$ 10.00	$ 420					$ -
Drip irrigation	832	SF	$ 0.50	$ 416	Drip irrigation	252	SF	$ 0.50	$ 126					$ -
Boulders	37	EA	$ 325.00	$ 12,025	Boulders	11	EA	$ 325.00	$ 3,575					$ -
Decomposed Granite	832	EA	$ 0.25	$ 208	Decomposed Granite	252	EA	$ 0.25	$ 63					$ -
SUB-TOTAL			TOTAL	$ 796,336	SUB-TOTAL			TOTAL	$ 147,002	SUB-TOTAL			TOTAL	$ 112,122

Trail Type

Conservation/Interpretation Trail					Equestrian Corridor					Trail Element: Corridor Prototype Designs				
ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total
4' wide stabilized decomposed granite	48,324	SF	$ 0.35	$ 16,913	4' wide cleared/improved corridor	80,476	SF	$ 0.05	$ 4,024	Gateway	0	EA	$ 51,625	$ -
Accent concrete/paving at nodes	58	SF	$ 4.00	$ 232					$ -	Primary Staging Area/Gateway	0	EA	$ 326,340	$ -
Site/seat wall (20" High x 8" Wide)	4	LF	$ 100.00	$ 400					$ -	Secondary Staging Area	0	EA	$ 64,190	$ -
Trash Receptacle	1	EA	$ 400.00	$ 400					$ -	Trail Connection	5	EA	$ 30,334	$ 151,670
Drinking Fountain	1	EA	$ 1,500.00	$ 1,500					$ -	Riverbed Access Ramp	0	EA	$ 50,000	$ -
Informational/directional signage	1	EA	$ 2,000.00	$ 2,000					$ -	Future Roadway Bridge	0	EA	*	
Lighted bollards	1	EA	$ 1,500.00	$ 1,500					$ -	Prefabricated Pedestrian Bridge	7	EA	$ 1,500,000	$ 10,500,000
15 Gallon Trees	2	EA	$ 125.00	$ 250					$ -	Transit Connection Node	0	EA	$ 55,103	$ -
5 Gallon Shrubs	7	EA	$ 20.00	$ 140					$ -	Trail Underpass Improvements	0	EA	$ 500,000	$ -
1 Gallon Groundcover	11	EA	$ 10.00	$ 110					$ -	At-Grade Primary Trail Crossing	0	EA	**	varies
Drip irrigation	63	SF	$ 0.50	$ 32					$ -					
SUB-TOTAL			TOTAL	$ 23,477	SUB-TOTAL			TOTAL	$ 4,024	SUB-TOTAL			TOTAL	$ 10,651,670

NOTE: All primary trail costs for the New River and Lower Agua Fria River Corridor trail segments are based on recommended, typical 12-foot wide trail. These costs are based on year 2001 figures.

SEGMENT 4 APPROXIMATE TOTAL	TOTAL	$11,734,000

* Not included in costs
** Cost will vary by location and local preference (pavement/trail markings and signage vs. signaliziatic

TRAIL SEGMENT: N-5

Trail Type

PRIMARY TRAIL					
ITEM	Quantity	Unit	Cost per Unit	Total	
12' wide asphalt/concrete	396,540	SF	$ 1.75	$	693,945
Accent concrete/paving at nodes	770	SF	$ 4.00	$	3,080
Site/seat wall (20" High x 8" Wide)	53	LF	$ 100.00	$	5,300
Trash Receptacle	5	EA	$ 400.00	$	2,000
Drinking Fountain	5	EA	$ 1,500.00	$	7,500
Informational/directional signage	5	EA	$ 2,000.00	$	10,000
Lighted bollards	9	EA	$ 1,500.00	$	13,500
15 Gallon Trees	18	EA	$ 125.00	$	2,250
5 Gallon Shrubs	92	EA	$ 20.00	$	1,840
1 Gallon Groundcover	139	EA	$ 10.00	$	1,390
Drip irrigation	832	SF	$ 0.50	$	416
Boulders	37	EA	$ 325.00	$	12,025
Decomposed Granite	832	EA	$ 0.25	$	208
SUB-TOTAL			TOTAL	$	753,454

Secondary Trail					
ITEM	Quantity	Unit	Cost per Unit	Total	
8' wide stabilized decomposed granite	402,528	SF	$ 0.35	$	140,885
Accent concrete/paving at nodes	233	SF	$ 4.00	$	932
Site/seat wall (20" High x 8" Wide)	16	LF	$ 100.00	$	1,600
Trash Receptacle	1	EA	$ 400.00	$	400
Drinking Fountain	1	EA	$ 1,500.00	$	1,500
Informational/directional signage	1	EA	$ 2,000.00	$	2,000
Lighted bollards	3	EA	$ 1,500.00	$	4,500
15 Gallon Trees	6	EA	$ 125.00	$	750
5 Gallon Shrubs	8	EA	$ 20.00	$	160
1 Gallon Groundcover	42	EA	$ 10.00	$	420
Drip irrigation	252	SF	$ 0.50	$	126
Boulders	11	EA	$ 325.00	$	3,575
Decomposed Granite	252	EA	$ 0.25	$	63
SUB-TOTAL			TOTAL	$	156,911

Neighborhood/Transit/Connector Trail					
ITEM	Quantity	Unit	Cost per Unit	Total	
8' wide asphalt/concrete	170,880	SF	$ 1.75	$	299,040
Informational/directional signage	1	EA	$ 2,000.00	$	2,000
Lighted bollards	2	EA	$ 1,500.00	$	3,000
15 Gallon Trees	4	EA	$ 125.00	$	500
5 Gallon Shrubs	18	EA	$ 20.00	$	360
1 Gallon Groundcover	27	EA	$ 10.00	$	270
Drip irrigation	164	SF	$ 0.50	$	82
				$	-
				$	-
				$	-
				$	-
				$	-
SUB-TOTAL			TOTAL	$	305,252

Trail Type

Conservation/Interpretation Trail					
ITEM	Quantity	Unit	Cost per Unit	Total	
4' wide stabilized decomposed granite	69,548	SF	$ 0.35	$	24,342
Accent concrete/paving at nodes	58	SF	$ 4.00	$	232
Site/seat wall (20" High x 8" Wide)	4	LF	$ 100.00	$	400
Trash Receptacle	1	EA	$ 400.00	$	400
Drinking Fountain	1	EA	$ 1,500.00	$	1,500
Informational/directional signage	1	EA	$ 2,000.00	$	2,000
Lighted bollards	1	EA	$ 1,500.00	$	1,500
15 Gallon Trees	2	EA	$ 125.00	$	250
5 Gallon Shrubs	7	EA	$ 20.00	$	140
1 Gallon Groundcover	11	EA	$ 10.00	$	110
Drip irrigation	63	SF	$ 0.50	$	32
SUB-TOTAL			TOTAL	$	30,905

Equestrian Corridor					
ITEM	Quantity	Unit	Cost per Unit	Total	
4' wide cleared/improved corridor	190,520	SF	$ 0.05	$	9,526
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-
SUB-TOTAL			TOTAL	$	9,526

Trail Element

Corridor Prototype Designs					
ITEM	Quantity	Unit	Cost per Unit	Total	
Gateway	0	EA	$ 51,625	$	-
Primary Staging Area/Gateway	1	EA	$ 326,340	$	326,340
Secondary Staging Area	0	EA	$ 64,190	$	-
Trail Connection	8	EA	$ 30,334	$	242,672
Riverbed Access Ramp	0	EA	$ 50,000	$	-
Future Roadway Bridge	0	EA	*		
Prefabricated Pedestrian Bridge	1	EA	$ 1,500,000	$	1,500,000
Transit Connection Node	0	EA	$ 55,103	$	-
Trail Underpass Improvements	0	EA	$ 500,000	$	-
At-Grade Primary Trail Crossing	0	EA	**		varies
SUB-TOTAL			TOTAL	$	2,069,012

NOTE: All primary trail costs for the New River and Lower Agua Fria River Corridor trail segments are based on recommended, typical 12-foot wide trail. These costs are based on year 2001 figures.

SEGMENT 5 APPROXIMATE TOTAL	TOTAL	$3,325,000

* Not included in costs

** Cost will vary by location and local preference (pavement/trail markings and signage vs. signaliziati

TRAIL SEGMENT: N-6

Trail Type

PRIMARY TRAIL						Secondary Trail						Neighborhood/Transit/Connector Trail					
ITEM	Quantity	Unit	Cost per Unit		Total	ITEM	Quantity	Unit	Cost per Unit		Total	ITEM	Quantity	Unit	Cost per Unit		Total
12' wide asphalt/concrete	324,592	SF	$ 1.75	$	568,036	8' wide stabilized decomposed granite	448,624	SF	$ 0.35	$	157,018	8' wide asphalt/concrete	44,200	SF	$ 1.75	$	77,350
Accent concrete/paving at nodes	770	SF	$ 4.00	$	3,080	Accent concrete/paving at nodes	233	SF	$ 4.00	$	932	Informational/directional signage	1	EA	$ 2,000.00	$	2,000
Site/seat wall (20" High x 8" Wide)	53	LF	$ 100.00	$	5,300	Site/seat wall (20" High x 8" Wide)	16	LF	$ 100.00	$	1,600	Lighted bollards	2	EA	$ 1,500.00	$	3,000
Trash Receptacle	5	EA	$ 400.00	$	2,000	Trash Receptacle	1	EA	$ 400.00	$	400	15 Gallon Trees	4	EA	$ 125.00	$	500
Drinking Fountain	5	EA	$ 1,500.00	$	7,500	Drinking Fountain	1	EA	$ 1,500.00	$	1,500	5 Gallon Shrubs	18	EA	$ 20.00	$	360
Informational/directional signage	5	EA	$ 2,000.00	$	10,000	Informational/directional signage	1	EA	$ 2,000.00	$	2,000	1 Gallon Groundcover	27	EA	$ 10.00	$	270
Lighted bollards	9	EA	$ 1,500.00	$	13,500	Lighted bollards	3	EA	$ 1,500.00	$	4,500	Drip irrigation	164	SF	$ 0.50	$	82
15 Gallon Trees	18	EA	$ 125.00	$	2,250	15 Gallon Trees	6	EA	$ 125.00	$	750					$	-
5 Gallon Shrubs	92	EA	$ 20.00	$	1,840	5 Gallon Shrubs	8	EA	$ 20.00	$	160					$	-
1 Gallon Groundcover	139	EA	$ 10.00	$	1,390	1 Gallon Groundcover	42	EA	$ 10.00	$	420					$	-
Drip irrigation	832	SF	$ 0.50	$	416	Drip irrigation	252	SF	$ 0.50	$	126					$	-
Boulders	37	EA	$ 325.00	$	12,025	Boulders	11	EA	$ 325.00	$	3,575					$	-
Decomposed Granite	832	EA	$ 0.25	$	208	Decomposed Granite	252	EA	$ 0.25	$	63					$	-
SUB-TOTAL			TOTAL	$	627,545	SUB-TOTAL			TOTAL	$	173,044	SUB-TOTAL			TOTAL	$	83,562

Trail Type

Conservation/Interpretation Trail						Equestrian Corridor						Trail Element					
ITEM	Quantity	Unit	Cost per Unit		Total	ITEM	Quantity	Unit	Cost per Unit		Total	Corridor Prototype Designs					
4' wide stabilized decomposed granite	122,328	SF	$ 0.35	$	42,815	4' wide cleared/improved corridor	131,844	SF	$ 0.05	$	6,592	ITEM	Quantity	Unit	Cost per Unit		Total
Accent concrete/paving at nodes	58	SF	$ 4.00	$	232					$	-	Gateway	2	EA	$ 51,625	$	103,250
Site/seat wall (20" High x 8" Wide)	4	LF	$ 100.00	$	400					$	-	Primary Staging Area/Gateway	0	EA	$ 326,340	$	-
Trash Receptacle	1	EA	$ 400.00	$	400					$	-	Secondary Staging Area	1	EA	$ 64,190	$	64,190
Drinking Fountain	1	EA	$ 1,500.00	$	1,500					$	-	Trail Connection	5	EA	$ 30,334	$	151,670
Informational/directional signage	1	EA	$ 2,000.00	$	2,000					$	-	Riverbed Access Ramp	0	EA	$ 50,000	$	-
Lighted bollards	1	EA	$ 1,500.00	$	1,500					$	-	Future Roadway Bridge	0	EA	*		
15 Gallon Trees	2	EA	$ 125.00	$	250					$	-	Prefabricated Pedestrian Bridge	4	EA	$ 1,500,000	$	6,000,000
5 Gallon Shrubs	7	EA	$ 20.00	$	140					$	-	Transit Connection Node	0	EA	$ 55,103	$	-
1 Gallon Groundcover	11	EA	$ 10.00	$	110					$	-	Trail Underpass Improvements	0	EA	$ 500,000	$	-
Drip irrigation	63	SF	$ 0.50	$	32					$	-	At-Grade Primary Trail Crossing	1	EA	**		varies
SUB-TOTAL			TOTAL	$	49,378	SUB-TOTAL			TOTAL	$	6,592	SUB-TOTAL			TOTAL	$	6,319,110

NOTE: All primary trail costs for the New River and Lower Agua Fria River Corridor trail segments are based on recommended, typical 12-foot wide trail. These costs are based on year 2001 figures.

SEGMENT 6 APPROXIMATE TOTAL	TOTAL	$7,260,000

* Not included in costs
** Cost will vary by location and local preference (pavement/trail markings and signage vs. signaliziatic

TRAIL SEGMENT: C-7

Trail Type

PRIMARY TRAIL					Secondary Trail					Neighborhood/Transit/Connector Trail				
ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total
12' wide asphalt/concrete	304,380	SF	$ 1.75	$ 532,665	8' wide stabilized decomposed granite	262,024	SF	$ 0.35	$ 91,708	8' wide asphalt/concrete	356,672	SF	$ 1.75	$ 624,176
Accent concrete/paving at nodes	770	SF	$ 4.00	$ 3,080	Accent concrete/paving at nodes	233	SF	$ 4.00	$ 932	Informational/directional signage	1	EA	$ 2,000.00	$ 2,000
Site/seat wall (20" High x 8" Wide)	53	LF	$ 100.00	$ 5,300	Site/seat wall (20" High x 8" Wide)	16	LF	$ 100.00	$ 1,600	Lighted bollards	2	EA	$ 1,500.00	$ 3,000
Trash Receptacle	5	EA	$ 400.00	$ 2,000	Trash Receptacle	1	EA	$ 400.00	$ 400	15 Gallon Trees	4	EA	$ 125.00	$ 500
Drinking Fountain	5	EA	$ 1,500.00	$ 7,500	Drinking Fountain	1	EA	$ 1,500.00	$ 1,500	5 Gallon Shrubs	18	EA	$ 20.00	$ 360
Informational/directional signage	5	EA	$ 2,000.00	$ 10,000	Informational/directional signage	1	EA	$ 2,000.00	$ 2,000	1 Gallon Groundcover	27	EA	$ 10.00	$ 270
Lighted bollards	9	EA	$ 1,500.00	$ 13,500	Lighted bollards	3	EA	$ 1,500.00	$ 4,500	Drip irrigation	164	SF	$ 0.50	$ 82
15 Gallon Trees	18	EA	$ 125.00	$ 2,250	15 Gallon Trees	6	EA	$ 125.00	$ 750					$ -
5 Gallon Shrubs	92	EA	$ 20.00	$ 1,840	5 Gallon Shrubs	8	EA	$ 20.00	$ 160					$ -
1 Gallon Groundcover	139	EA	$ 10.00	$ 1,390	1 Gallon Groundcover	42	EA	$ 10.00	$ 420					$ -
Drip irrigation	832	SF	$ 0.50	$ 416	Drip irrigation	252	SF	$ 0.50	$ 126					$ -
Boulders	37	EA	$ 325.00	$ 12,025	Boulders	11	EA	$ 325.00	$ 3,575					$ -
Decomposed Granite	832	EA	$ 0.25	$ 208	Decomposed Granite	252	EA	$ 0.25	$ 63					$ -
SUB-TOTAL			TOTAL	$ 592,174	SUB-TOTAL			TOTAL	$ 107,734	SUB-TOTAL			TOTAL	$ 630,388

Trail Type

Conservation/Interpretation Trail					Equestrian Corridor					Trail Element Corridor Prototype Designs				
ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total
4' wide stabilized decomposed granite	0	SF	$ 0.35	$ -	4' wide cleared/improved corridor	68,504	SF	$ 0.05	$ 3,425	Gateway	4	EA	$ 51,625	$ 206,500
Accent concrete/paving at nodes	0	SF	$ 4.00	$ -					$ -	Primary Staging Area/Gateway	1	EA	$ 326,340	$ 326,340
Site/seat wall (20" High x 8" Wide)	0	LF	$ 100.00	$ -					$ -	Secondary Staging Area	0	EA	$ 64,190	$ -
Trash Receptacle	0	EA	$ 400.00	$ -					$ -	Trail Connection	6	EA	$ 30,334	$ 182,004
Drinking Fountain	0	EA	$ 1,500.00	$ -					$ -	Riverbed Access Ramp	2	EA	$ 50,000	$ 100,000
Informational/directional signage	0	EA	$ 2,000.00	$ -					$ -	Future Roadway Bridge	2	EA	*	
Lighted bollards	0	EA	$ 1,500.00	$ -					$ -	Prefabricated Pedestrian Bridge	1	EA	$ 1,500,000	$ 1,500,000
15 Gallon Trees	0	EA	$ 125.00	$ -					$ -	Transit Connection Node	0	EA	$ 55,103	$ -
5 Gallon Shrubs	0	EA	$ 20.00	$ -					$ -	Trail Underpass Improvements	2	EA	$ 500,000	$ 1,000,000
1 Gallon Groundcover	0	EA	$ 10.00	$ -					$ -	At-Grade Primary Trail Crossing	1	EA	**	varies
Drip irrigation	0	SF	$ 0.50	$ -					$ -					
SUB-TOTAL			TOTAL	$ -	SUB-TOTAL			TOTAL	$ 3,425	SUB-TOTAL			TOTAL	$ 3,314,844

NOTE: All primary trail costs for the New River and Lower Agua Fria River Corridor trail segments are based on recommended, typical 12-foot wide trail. These costs are based on year 2001 figures.

SEGMENT 7 APPROXIMATE TOTAL	TOTAL	$4,648,000

* Not included in costs

** Cost will vary by location and local preference (pavement/trail markings and signage vs. signaliziatio

TRAIL SEGMENT: C-8

Trail Type

PRIMARY TRAIL					
ITEM	Quantity	Unit	Cost per Unit	Total	
12' wide asphalt/concrete	574,236	SF	$ 1.75	$	1,004,913
Accent concrete/paving at nodes	770	SF	$ 4.00	$	3,080
Site/seat wall (20" High x 8" Wide)	53	LF	$ 100.00	$	5,300
Trash Receptacle	5	EA	$ 400.00	$	2,000
Drinking Fountain	5	EA	$ 1,500.00	$	7,500
Informational/directional signage	5	EA	$ 2,000.00	$	10,000
Lighted bollards	9	EA	$ 1,500.00	$	13,500
15 Gallon Trees	18	EA	$ 125.00	$	2,250
5 Gallon Shrubs	92	EA	$ 20.00	$	1,840
1 Gallon Groundcover	139	EA	$ 10.00	$	1,390
Drip irrigation	832	SF	$ 0.50	$	416
Boulders	37	EA	$ 325.00	$	12,025
Decomposed Granite	832	EA	$ 0.25	$	208
SUB-TOTAL			TOTAL	$	1,064,422

Secondary Trail					
ITEM	Quantity	Unit	Cost per Unit	Total	
8' wide stabilized decomposed granite	168,280	SF	$ 0.35	$	58,898
Accent concrete/paving at nodes	233	SF	$ 4.00	$	932
Site/seat wall (20" High x 8" Wide)	16	LF	$ 100.00	$	1,600
Trash Receptacle	1	EA	$ 400.00	$	400
Drinking Fountain	1	EA	$ 1,500.00	$	1,500
Informational/directional signage	1	EA	$ 2,000.00	$	2,000
Lighted bollards	3	EA	$ 1,500.00	$	4,500
15 Gallon Trees	6	EA	$ 125.00	$	750
5 Gallon Shrubs	8	EA	$ 20.00	$	160
1 Gallon Groundcover	42	EA	$ 10.00	$	420
Drip irrigation	252	SF	$ 0.50	$	126
Boulders	11	EA	$ 325.00	$	3,575
Decomposed Granite	252	EA	$ 0.25	$	63
SUB-TOTAL			TOTAL	$	74,924

Neighborhood/Transit/Connector Trail					
ITEM	Quantity	Unit	Cost per Unit	Total	
8' wide asphalt/concrete	655,352	SF	$ 1.75	$	1,146,866
Informational/directional signage	1	EA	$ 2,000.00	$	2,000
Lighted bollards	2	EA	$ 1,500.00	$	3,000
15 Gallon Trees	4	EA	$ 125.00	$	500
5 Gallon Shrubs	18	EA	$ 20.00	$	360
1 Gallon Groundcover	27	EA	$ 10.00	$	270
Drip irrigation	164	SF	$ 0.50	$	82
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-
SUB-TOTAL			TOTAL	$	1,153,078

Trail Type

Conservation/Interpretation Trail					
ITEM	Quantity	Unit	Cost per Unit	Total	
4' wide stabilized decomposed granite	0	SF	$ 0.35	$	-
Accent concrete/paving at nodes	0	SF	$ 4.00	$	-
Site/seat wall (20" High x 8" Wide)	0	LF	$ 100.00	$	-
Trash Receptacle	0	EA	$ 400.00	$	-
Drinking Fountain	0	EA	$ 1,500.00	$	-
Informational/directional signage	0	EA	$ 2,000.00	$	-
Lighted bollards	0	EA	$ 1,500.00	$	-
15 Gallon Trees	0	EA	$ 125.00	$	-
5 Gallon Shrubs	0	EA	$ 20.00	$	-
1 Gallon Groundcover	0	EA	$ 10.00	$	-
Drip irrigation	0	SF	$ 0.50	$	-
SUB-TOTAL			TOTAL	$	-

Equestrian Corridor					
ITEM	Quantity	Unit	Cost per Unit	Total	
4' wide cleared/improved corridor	92,800	SF	$ 0.05	$	4,640
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-
SUB-TOTAL			TOTAL	$	4,640

Trail Element

Corridor Prototype Designs					
ITEM	Quantity	Unit	Cost per Unit	Total	
Gateway	7	EA	$ 51,625	$	361,375
Primary Staging Area/Gateway	1	EA	$ 326,340	$	326,340
Secondary Staging Area	0	EA	$ 64,190	$	-
Trail Connection	2	EA	$ 30,334	$	60,668
Riverbed Access Ramp	2	EA	$ 50,000	$	100,000
Future Roadway Bridge	1	EA	*		
Prefabricated Pedestrian Bridge	2	EA	$ 1,500,000	$	3,000,000
Transit Connection Node	3	EA	$ 55,103	$	165,309
Trail Underpass Improvements	2	EA	$ 500,000	$	1,000,000
At-Grade Primary Trail Crossing	0	EA	**		varies
SUB-TOTAL			TOTAL	$	5,013,692

NOTE: All primary trail costs for the New River and Lower Agua Fria River Corridor trail segments are based on recommended, typical 12-foot wide trail. These costs are based on year 2001 figures.

SEGMENT 8 APPROXIMATE TOTAL	TOTAL	$7,311,000

* Not included in costs

** Cost will vary by location and local preference (pavement/trail markings and signage vs. signaliziatic

TRAIL SEGMENT: C-9

Trail Type

PRIMARY TRAIL					Secondary Trail					Neighborhood/Transit/Connector Trail				
ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total
12' wide asphalt/concrete	309,060	SF	$ 1.75	$ 540,855	8' wide stabilized decomposed granite	188,888	SF	$ 0.35	$ 66,111	8' wide asphalt/concrete	119,592	SF	$ 1.75	$ 209,286
Accent concrete/paving at nodes	770	SF	$ 4.00	$ 3,080	Accent concrete/paving at nodes	233	SF	$ 4.00	$ 932	Informational/directional signage	1	EA	$ 2,000.00	$ 2,000
Site/seat wall (20" High x 8" Wide)	53	LF	$ 100.00	$ 5,300	Site/seat wall (20" High x 8" Wide)	16	LF	$ 100.00	$ 1,600	Lighted bollards	2	EA	$ 1,500.00	$ 3,000
Trash Receptacle	5	EA	$ 400.00	$ 2,000	Trash Receptacle	1	EA	$ 400.00	$ 400	15 Gallon Trees	4	EA	$ 125.00	$ 500
Drinking Fountain	5	EA	$ 1,500.00	$ 7,500	Drinking Fountain	1	EA	$ 1,500.00	$ 1,500	5 Gallon Shrubs	18	EA	$ 20.00	$ 360
Informational/directional signage	5	EA	$ 2,000.00	$ 10,000	Informational/directional signage	1	EA	$ 2,000.00	$ 2,000	1 Gallon Groundcover	27	EA	$ 10.00	$ 270
Lighted bollards	9	EA	$ 1,500.00	$ 13,500	Lighted bollards	3	EA	$ 1,500.00	$ 4,500	Drip irrigation	164	SF	$ 0.50	$ 82
15 Gallon Trees	18	EA	$ 125.00	$ 2,250	15 Gallon Trees	6	EA	$ 125.00	$ 750					$ -
5 Gallon Shrubs	92	EA	$ 20.00	$ 1,840	5 Gallon Shrubs	8	EA	$ 20.00	$ 160					$ -
1 Gallon Groundcover	139	EA	$ 10.00	$ 1,390	1 Gallon Groundcover	42	EA	$ 10.00	$ 420					$ -
Drip irrigation	832	SF	$ 0.50	$ 416	Drip irrigation	252	SF	$ 0.50	$ 126					$ -
Boulders	37	EA	$ 325.00	$ 12,025	Boulders	11	EA	$ 325.00	$ 3,575					$ -
Decomposed Granite	832	EA	$ 0.25	$ 208	Decomposed Granite	252	EA	$ 0.25	$ 63					$ -
SUB-TOTAL			TOTAL	$ 600,364	SUB-TOTAL			TOTAL	$ 82,137	SUB-TOTAL			TOTAL	$ 215,498

Trail Type

Conservation/Interpretation Trail					Equestrian Corridor					Trail Element: Corridor Prototype Designs				
ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total
4' wide stabilized decomposed granite	0	SF	$ 0.35	$ -	4' wide cleared/improved corridor	131,752	SF	$ 0.05	$ 6,588	Gateway	1	EA	$ 51,625	$ 51,625.00
Accent concrete/paving at nodes	0	SF	$ 4.00	$ -					$ -	Primary Staging Area/Gateway	2	EA	$ 326,340	$ 652,680
Site/seat wall (20" High x 8" Wide)	0	LF	$ 100.00	$ -					$ -	Secondary Staging Area	0	EA	$ 64,190	$ -
Trash Receptacle	0	EA	$ 400.00	$ -					$ -	Trail Connection	5	EA	$ 30,334	$ 151,670
Drinking Fountain	0	EA	$ 1,500.00	$ -					$ -	Riverbed Access Ramp	2	EA	$ 50,000	$ 100,000
Informational/directional signage	0	EA	$ 2,000.00	$ -					$ -	Future Roadway Bridge	0	EA	*	
Lighted bollards	0	EA	$ 1,500.00	$ -					$ -	Prefabricated Pedestrian Bridge	2	EA	$ 1,500,000	$ 3,000,000
15 Gallon Trees	0	EA	$ 125.00	$ -					$ -	Transit Connection Node	2	EA	$ 55,103	$ 110,206
5 Gallon Shrubs	0	EA	$ 20.00	$ -					$ -	Trail Underpass Improvements	1	EA	$ 500,000	$ 500,000
1 Gallon Groundcover	0	EA	$ 10.00	$ -					$ -	At-Grade Primary Trail Crossing	0	EA	**	varies
Drip irrigation	0	SF	$ 0.50	$ -					$ -					
SUB-TOTAL			TOTAL	$ -	SUB-TOTAL			TOTAL	$ 6,588	SUB-TOTAL			TOTAL	$ 4,566,181

NOTE: All primary trail costs for the New River and Lower Agua Fria River Corridor trail segments are based on recommended, typical 12-foot wide trail. These costs are based on year 2001 figures.

SEGMENT 9 APPROXIMATE TOTAL	TOTAL	$5,470,000

* Not included in costs

** Cost will vary by location and local preference (pavement/trail markings and signage vs. signaliziatic

TRAIL SEGMENT: C-10

Trail Type

PRIMARY TRAIL					
ITEM	Quantity	Unit	Cost per Unit	Total	
12' wide asphalt/concrete	251,388	SF	$ 1.75	$	439,929
Accent concrete/paving at nodes	770	SF	$ 4.00	$	3,080
Site/seat wall (20" High x 8" Wide)	53	LF	$ 100.00	$	5,300
Trash Receptacle	5	EA	$ 400.00	$	2,000
Drinking Fountain	5	EA	$ 1,500.00	$	7,500
Informational/directional signage	5	EA	$ 2,000.00	$	10,000
Lighted bollards	9	EA	$ 1,500.00	$	13,500
15 Gallon Trees	18	EA	$ 125.00	$	2,250
5 Gallon Shrubs	92	EA	$ 20.00	$	1,840
1 Gallon Groundcover	139	EA	$ 10.00	$	1,390
Drip irrigation	832	SF	$ 0.50	$	416
Boulders	37	EA	$ 325.00	$	12,025
Decomposed Granite	832	EA	$ 0.25	$	208
SUB-TOTAL			TOTAL	$	499,438

Secondary Trail					
ITEM	Quantity	Unit	Cost per Unit	Total	
8' wide stabilized decomposed granite	**225,720**	SF	$ 0.35	$	79,002
Accent concrete/paving at nodes	**233**	SF	$ 4.00	$	932
Site/seat wall (20" High x 8" Wide)	**16**	LF	$ 100.00	$	1,600
Trash Receptacle	**1**	EA	$ 400.00	$	400
Drinking Fountain	**1**	EA	$ 1,500.00	$	1,500
Informational/directional signage	**1**	EA	$ 2,000.00	$	2,000
Lighted bollards	**3**	EA	$ 1,500.00	$	4,500
15 Gallon Trees	**6**	EA	$ 125.00	$	750
5 Gallon Shrubs	**8**	EA	$ 20.00	$	160
1 Gallon Groundcover	**42**	EA	$ 10.00	$	420
Drip irrigation	**252**	SF	$ 0.50	$	126
Boulders	**11**	EA	$ 325.00	$	3,575
Decomposed Granite	**252**	EA	$ 0.25	$	63
SUB-TOTAL			TOTAL	$	95,028

Neighborhood/Transit/Connector Trail					
ITEM	Quantity	Unit	Cost per Unit	Total	
8' wide asphalt/concrete	147,600	SF	$ 1.75	$	258,300
Informational/directional signage	1	EA	$ 2,000.00	$	2,000
Lighted bollards	2	EA	$ 1,500.00	$	3,000
15 Gallon Trees	4	EA	$ 125.00	$	500
5 Gallon Shrubs	18	EA	$ 20.00	$	360
1 Gallon Groundcover	27	EA	$ 10.00	$	270
Drip irrigation	164	SF	$ 0.50	$	82
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-
SUB-TOTAL			TOTAL	$	264,512

Trail Type

Conservation/Interpretation Trail					
ITEM	Quantity	Unit	Cost per Unit	Total	
4' wide stabilized decomposed granite	0	SF	$ 0.35	$	-
Accent concrete/paving at nodes	0	SF	$ 4.00	$	-
Site/seat wall (20" High x 8" Wide)	0	LF	$ 100.00	$	-
Trash Receptacle	0	EA	$ 400.00	$	-
Drinking Fountain	0	EA	$ 1,500.00	$	-
Informational/directional signage	0	EA	$ 2,000.00	$	-
Lighted bollards	0	EA	$ 1,500.00	$	-
15 Gallon Trees	0	EA	$ 125.00	$	-
5 Gallon Shrubs	0	EA	$ 20.00	$	-
1 Gallon Groundcover	0	EA	$ 10.00	$	-
Drip irrigation	0	SF	$ 0.50	$	-
SUB-TOTAL			TOTAL	$	-

Equestrian Corridor					
ITEM	Quantity	Unit	Cost per Unit	Total	
4' wide cleared/improved corridor	**47,884**	SF	$ 0.05	$	2,394
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-
SUB-TOTAL			TOTAL	$	2,394

Trail Element

Corridor Prototype Designs					
ITEM	Quantity	Unit	Cost per Unit	Total	
Gateway	2	EA	$ 51,625	$	103,250
Primary Staging Area/Gateway	0	EA	$ 326,340	$	-
Secondary Staging Area	0	EA	$ 64,190	$	-
Trail Connection	2	EA	$ 30,334	$	60,668
Riverbed Access Ramp	0	EA	$ 50,000	$	-
Future Roadway Bridge	0	EA	*		
Prefabricated Pedestrian Bridge	0	EA	$ 1,500,000	$	-
Transit Connection Node	3	EA	$ 55,103	$	165,309
Trail Underpass Improvements	2	EA	$ 500,000	$	1,000,000
At-Grade Primary Trail Crossing	0	EA	**		varies
SUB-TOTAL			TOTAL	$	1,329,227

NOTE: All primary trail costs for the New River and Lower Agua Fria River Corridor trail segments are based on recommended, typical 12-foot wide trail. These costs are based on year 2001 figures.

SEGMENT 10 APPROXIMATE TOTAL	TOTAL	$2,189,000

* Not included in costs
** Cost will vary by location and local preference (pavement/trail markings and signage vs. signaliziatio

TRAIL SEGMENT: C-11

Trail Type

PRIMARY TRAIL					
ITEM	Quantity	Unit	Cost per Unit	Total	
12' wide asphalt/concrete	574,092	SF	$ 1.75	$	1,004,661
Accent concrete/paving at nodes	770	SF	$ 4.00	$	3,080
Site/seat wall (20" High x 8" Wide)	53	LF	$ 100.00	$	5,300
Trash Receptacle	5	EA	$ 400.00	$	2,000
Drinking Fountain	5	EA	$ 1,500.00	$	7,500
Informational/directional signage	5	EA	$ 2,000.00	$	10,000
Lighted bollards	9	EA	$ 1,500.00	$	13,500
15 Gallon Trees	18	EA	$ 125.00	$	2,250
5 Gallon Shrubs	92	EA	$ 20.00	$	1,840
1 Gallon Groundcover	139	EA	$ 10.00	$	1,390
Drip irrigation	832	SF	$ 0.50	$	416
Boulders	37	EA	$ 325.00	$	12,025
Decomposed Granite	832	EA	$ 0.25	$	208
SUB-TOTAL			TOTAL	$	1,064,170

Secondary Trail					
ITEM	Quantity	Unit	Cost per Unit	Total	
8' wide stabilized decomposed granite	145,520	SF	$ 0.35	$	50,932
Accent concrete/paving at nodes	233	SF	$ 4.00	$	932
Site/seat wall (20" High x 8" Wide)	16	LF	$ 100.00	$	1,600
Trash Receptacle	1	EA	$ 400.00	$	400
Drinking Fountain	1	EA	$ 1,500.00	$	1,500
Informational/directional signage	1	EA	$ 2,000.00	$	2,000
Lighted bollards	3	EA	$ 1,500.00	$	4,500
15 Gallon Trees	6	EA	$ 125.00	$	750
5 Gallon Shrubs	8	EA	$ 20.00	$	160
1 Gallon Groundcover	42	EA	$ 10.00	$	420
Drip irrigation	252	SF	$ 0.50	$	126
Boulders	11	EA	$ 325.00	$	3,575
Decomposed Granite	252	EA	$ 0.25	$	63
SUB-TOTAL			TOTAL	$	66,958

Neighborhood/Transit/Connector Trail					
ITEM	Quantity	Unit	Cost per Unit	Total	
8' wide asphalt/concrete	216,960	SF	$ 1.75	$	379,680
Informational/directional signage	1	EA	$ 2,000.00	$	2,000
Lighted bollards	2	EA	$ 1,500.00	$	3,000
15 Gallon Trees	4	EA	$ 125.00	$	500
5 Gallon Shrubs	18	EA	$ 20.00	$	360
1 Gallon Groundcover	27	EA	$ 10.00	$	270
Drip irrigation	164	SF	$ 0.50	$	82
				$	-
				$	-
				$	-
				$	-
				$	-
SUB-TOTAL			TOTAL	$	385,892

Trail Type

Conservation/Interpretation Trail					
ITEM	Quantity	Unit	Cost per Unit	Total	
4' wide stabilized decomposed granite	0	SF	$ 0.35	$	-
Accent concrete/paving at nodes	0	SF	$ 4.00	$	-
Site/seat wall (20" High x 8" Wide)	0	LF	$ 100.00	$	-
Trash Receptacle	0	EA	$ 400.00	$	-
Drinking Fountain	0	EA	$ 1,500.00	$	-
Informational/directional signage	0	EA	$ 2,000.00	$	-
Lighted bollards	0	EA	$ 1,500.00	$	-
15 Gallon Trees	0	EA	$ 125.00	$	-
5 Gallon Shrubs	0	EA	$ 20.00	$	-
1 Gallon Groundcover	0	EA	$ 10.00	$	-
Drip irrigation	0	SF	$ 0.60	$	-
SUB-TOTAL			TOTAL	$	-

Equestrian Corridor					
ITEM	Quantity	Unit	Cost per Unit	Total	
4' wide cleared/improved corridor	125,596	SF	$ 0.05	$	6,280
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-
SUB-TOTAL			TOTAL	$	6,280

Trail Element

Corridor Prototype Designs					
ITEM	Quantity	Unit	Cost per Unit	Total	
Gateway	8	EA	$ 51,625	$	413,000
Primary Staging Area/Gateway	0	EA	$ 326,340	$	-
Secondary Staging Area	0	EA	$ 64,190	$	-
Trail Connection	4	EA	$ 30,334	$	121,336
Riverbed Access Ramp	1	EA	$ 50,000	$	50,000
Future Roadway Bridge	0	EA	*		
Prefabricated Pedestrian Bridge	1	EA	$ 1,500,000	$	1,500,000
Transit Connection Node	1	EA	$ 55,103	$	55,103
Trail Underpass Improvements	3	EA	$ 500,000	$	1,500,000
At-Grade Primary Trail Crossing	0	EA	**		varies
SUB-TOTAL			TOTAL	$	3,639,439

NOTE: All primary trail costs for the New River and Lower Agua Fria River Corridor trail segments are based on recommended, typical 12-foot wide trail. These costs are based on year 2001 figures.

SEGMENT 11 APPROXIMATE TOTAL	TOTAL	$5,162,000

* Not included in costs

** Cost will vary by location and local preference (pavement/trail markings and signage vs. signaliziatio

TRAIL SEGMENT: C-12

Trail Type — PRIMARY TRAIL

ITEM	Quantity	Unit	Cost per Unit	Total
12' wide asphalt/concrete	545,868	SF	$ 1.75	$ 955,269
Accent concrete/paving at nodes	770	SF	$ 4.00	$ 3,080
Site/seat wall (20" High x 8" Wide)	53	LF	$ 100.00	$ 5,300
Trash Receptacle	5	EA	$ 400.00	$ 2,000
Drinking Fountain	5	EA	$ 1,500.00	$ 7,500
Informational/directional signage	5	EA	$ 2,000.00	$ 10,000
Lighted bollards	9	EA	$ 1,500.00	$ 13,500
15 Gallon Trees	18	EA	$ 125.00	$ 2,250
5 Gallon Shrubs	92	EA	$ 20.00	$ 1,840
1 Gallon Groundcover	139	EA	$ 10.00	$ 1,390
Drip irrigation	832	SF	$ 0.50	$ 416
Boulders	37	EA	$ 325.00	$ 12,025
Decomposed Granite	832	EA	$ 0.25	$ 208
SUB-TOTAL			TOTAL	$ 1,014,778

Secondary Trail

ITEM	Quantity	Unit	Cost per Unit	Total
8' wide stabilized decomposed granite	336,440	SF	$ 0.35	$ 117,754
Accent concrete/paving at nodes	233	SF	$ 4.00	$ 932
Site/seat wall (20" High x 8" Wide)	16	LF	$ 100.00	$ 1,600
Trash Receptacle	1	EA	$ 400.00	$ 400
Drinking Fountain	1	EA	$ 1,500.00	$ 1,500
Informational/directional signage	1	EA	$ 2,000.00	$ 2,000
Lighted bollards	3	EA	$ 1,500.00	$ 4,500
15 Gallon Trees	6	EA	$ 125.00	$ 750
5 Gallon Shrubs	8	EA	$ 20.00	$ 160
1 Gallon Groundcover	42	EA	$ 10.00	$ 420
Drip irrigation	252	SF	$ 0.50	$ 126
Boulders	11	EA	$ 325.00	$ 3,575
Decomposed Granite	252	EA	$ 0.25	$ 63
SUB-TOTAL			TOTAL	$ 133,780

Neighborhood/Transit/Connector Trail

ITEM	Quantity	Unit	Cost per Unit	Total
8' wide asphalt/concrete	74,536	SF	$ 1.75	$ 130,438
Informational/directional signage	1	EA	$ 2,000.00	$ 2,000
Lighted bollards	2	EA	$ 1,500.00	$ 3,000
15 Gallon Trees	4	EA	$ 125.00	$ 500
5 Gallon Shrubs	18	EA	$ 20.00	$ 360
1 Gallon Groundcover	27	EA	$ 10.00	$ 270
Drip irrigation	164	SF	$ 0.50	$ 82
				$ -
				$ -
				$ -
				$ -
				$ -
SUB-TOTAL			TOTAL	$ 136,650

Trail Type — Conservation/Interpretation Trail

ITEM	Quantity	Unit	Cost per Unit	Total
4' wide stabilized decomposed granite	0	SF	$ 0.35	$ -
Accent concrete/paving at nodes	0	SF	$ 4.00	$ -
Site/seat wall (20" High x 8" Wide)	0	LF	$ 100.00	$ -
Trash Receptacle	0	EA	$ 400.00	$ -
Drinking Fountain	0	EA	$ 1,500.00	$ -
Informational/directional signage	0	EA	$ 2,000.00	$ -
Lighted bollards	0	EA	$ 1,500.00	$ -
15 Gallon Trees	0	EA	$ 125.00	$ -
5 Gallon Shrubs	0	EA	$ 20.00	$ -
1 Gallon Groundcover	0	EA	$ 10.00	$ -
Drip irrigation	0	SF	$ 0.50	$ -
SUB-TOTAL			TOTAL	$ -

Equestrian Corridor

ITEM	Quantity	Unit	Cost per Unit	Total
4' wide cleared/improved corridor	84,132	SF	$ 0.05	$ 4,207
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
SUB-TOTAL			TOTAL	$ 4,207

Trail Element — Corridor Prototype Designs

ITEM	Quantity	Unit	Cost per Unit	Total
Gateway	5	EA	$ 51,625	$ 258,125
Primary Staging Area/Gateway	1	EA	$ 326,340	$ 326,340
Secondary Staging Area	0	EA	$ 64,190	$ -
Trail Connection	2	EA	$ 30,334	$ 60,668
Riverbed Access Ramp	2	EA	$ 50,000	$ 100,000
Future Roadway Bridge	0	EA	*	
Prefabricated Pedestrian Bridge	2	EA	$ 1,500,000	$ 3,000,000
Transit Connection Node	3	EA	$ 55,103	$ 165,309
Trail Underpass Improvements	4	EA	$ 500,000	$ 2,000,000
At-Grade Primary Trail Crossing	0	EA	**	varies
SUB-TOTAL			TOTAL	$ 5,910,442

NOTE: All primary trail costs for the New River and Lower Agua Fria River Corridor trail segments are based on recommended, typical 12-foot wide trail. These costs are based on year 2001 figures.

SEGMENT 12 APPROXIMATE TOTAL	TOTAL	$7,200,000

* Not included in costs

** Cost will vary by location and local preference (pavement/trail markings and signage vs. signaliziatic

TRAIL SEGMENT: S-13

Trail Type

PRIMARY TRAIL					Secondary Trail					Neighborhood/Transit/Connector Trail				
ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total
12' wide asphalt/concrete	616,416	SF	$ 1.75	$ 1,078,728	8' wide stabilized decomposed granite	445,960	SF	$ 0.35	$ 156,086	8' wide asphalt/concrete	112,328	SF	$ 1.75	$ 196,574
Accent concrete/paving at nodes	770	SF	$ 4.00	$ 3,080	Accent concrete/paving at nodes	233	SF	$ 4.00	$ 932	Informational/directional signage	1	EA	$ 2,000.00	$ 2,000
Site/seat wall (20" High x 8" Wide)	53	LF	$ 100.00	$ 5,300	Site/seat wall (20" High x 8" Wide)	16	LF	$ 100.00	$ 1,600	Lighted bollards	2	EA	$ 1,500.00	$ 3,000
Trash Receptacle	5	EA	$ 400.00	$ 2,000	Trash Receptacle	1	EA	$ 400.00	$ 400	15 Gallon Trees	4	EA	$ 125.00	$ 500
Drinking Fountain	5	EA	$ 1,500.00	$ 7,500	Drinking Fountain	1	EA	$ 1,500.00	$ 1,500	5 Gallon Shrubs	18	EA	$ 20.00	$ 360
Informational/directional signage	5	EA	$ 2,000.00	$ 10,000	Informational/directional signage	1	EA	$ 2,000.00	$ 2,000	1 Gallon Groundcover	27	EA	$ 10.00	$ 270
Lighted bollards	9	EA	$ 1,500.00	$ 13,500	Lighted bollards	3	EA	$ 1,500.00	$ 4,500	Drip irrigation	164	SF	$ 0.50	$ 82
15 Gallon Trees	18	EA	$ 125.00	$ 2,250	15 Gallon Trees	6	EA	$ 125.00	$ 750					$ -
5 Gallon Shrubs	92	EA	$ 20.00	$ 1,840	5 Gallon Shrubs	8	EA	$ 20.00	$ 160					$ -
1 Gallon Groundcover	139	EA	$ 10.00	$ 1,390	1 Gallon Groundcover	42	EA	$ 10.00	$ 420					$ -
Drip irrigation	832	SF	$ 0.50	$ 416	Drip irrigation	252	SF	$ 0.50	$ 126					$ -
Boulders	37	EA	$ 325.00	$ 12,025	Boulders	11	EA	$ 325.00	$ 3,575					$ -
Decomposed Granite	832	EA	$ 0.25	$ 208	Decomposed Granite	252	EA	$ 0.25	$ 63					$ -
SUB-TOTAL			TOTAL	$ 1,138,237	SUB-TOTAL			TOTAL	$ 172,112	SUB-TOTAL			TOTAL	$ 202,786

Trail Type

Conservation/Interpretation Trail					Equestrian Corridor					Trail Element: Corridor Prototype Designs				
ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total
4' wide stabilized decomposed granite	0	SF	$ 0.35	$ -	4' wide cleared/improved corridor	87,892	SF	$ 0.05	$ 4,395	Gateway	4	EA	$ 51,625	$ 206,500
Accent concrete/paving at nodes	0	SF	$ 4.00	$ -					$ -	Primary Staging Area/Gateway	1	EA	$ 326,340	$ 326,340
Site/seat wall (20" High x 8" Wide)	0	LF	$ 100.00	$ -					$ -	Secondary Staging Area	0	EA	$ 64,190	$ -
Trash Receptacle	0	EA	$ 400.00	$ -					$ -	Trail Connection	6	EA	$ 30,334	$ 182,004
Drinking Fountain	0	EA	$ 1,500.00	$ -					$ -	Riverbed Access Ramp	3	EA	$ 50,000	$ 150,000
Informational/directional signage	0	EA	$ 2,000.00	$ -					$ -	Future Roadway Bridge	0	EA	*	
Lighted bollards	0	EA	$ 1,500.00	$ -					$ -	Prefabricated Pedestrian Bridge	3	EA	$ 1,500,000	$ 4,500,000
15 Gallon Trees	0	EA	$ 125.00	$ -					$ -	Transit Connection Node	0	EA	$ 55,103	$ -
5 Gallon Shrubs	0	EA	$ 20.00	$ -					$ -	Trail Underpass Improvements	0	EA	$ 500,000	$ -
1 Gallon Groundcover	0	EA	$ 10.00	$ -					$ -	At-Grade Primary Trail Crossing	2	EA	**	varies
Drip irrigation	0	SF	$ 0.50	$ -					$ -					
SUB-TOTAL			TOTAL	$ -	SUB-TOTAL			TOTAL	$ 4,395	SUB-TOTAL			TOTAL	$ 5,364,844

NOTE: All primary trail costs for the New River and Lower Agua Fria River Corridor trail segments are based on recommended, typical 12-foot wide trail. These costs are based on year 2001 figures.

SEGMENT 13 APPROXIMATE TOTAL	TOTAL	$6,881,000

* Not included in costs
** Cost will vary by location and local preference (pavement/trail markings and signage vs. signaliziatic

TRAIL SEGMENT: S-14

Trail Type

PRIMARY TRAIL					Secondary Trail					Neighborhood/Transit/Connector Trail				
ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total
12' wide asphalt/concrete	832,212	SF	$ 1.75	$ 1,456,371	8' wide stabilized decomposed granite	277,368	SF	$ 0.35	$ 97,079	8' wide asphalt/concrete	183,152	SF	$ 1.75	$ 320,516
Accent concrete/paving at nodes	770	SF	$ 4.00	$ 3,080	Accent concrete/paving at nodes	233	SF	$ 4.00	$ 932	Informational/directional signage	1	EA	$ 2,000.00	$ 2,000
Site/seat wall (20" High x 8" Wide)	53	LF	$ 100.00	$ 5,300	Site/seat wall (20" High x 8" Wide)	16	LF	$ 100.00	$ 1,600	Lighted bollards	2	EA	$ 1,500.00	$ 3,000
Trash Receptacle	5	EA	$ 400.00	$ 2,000	Trash Receptacle	1	EA	$ 400.00	$ 400	15 Gallon Trees	4	EA	$ 125.00	$ 500
Drinking Fountain	5	EA	$ 1,500.00	$ 7,500	Drinking Fountain	1	EA	$ 1,500.00	$ 1,500	5 Gallon Shrubs	18	EA	$ 20.00	$ 360
Informational/directional signage	5	EA	$ 2,000.00	$ 10,000	Informational/directional signage	1	EA	$ 2,000.00	$ 2,000	1 Gallon Groundcover	27	EA	$ 10.00	$ 270
Lighted bollards	9	EA	$ 1,500.00	$ 13,500	Lighted bollards	3	EA	$ 1,500.00	$ 4,500	Drip irrigation	164	SF	$ 0.50	$ 82
15 Gallon Trees	18	EA	$ 125.00	$ 2,250	15 Gallon Trees	6	EA	$ 125.00	$ 750					$ -
5 Gallon Shrubs	92	EA	$ 20.00	$ 1,840	5 Gallon Shrubs	8	EA	$ 20.00	$ 160					$ -
1 Gallon Groundcover	139	EA	$ 10.00	$ 1,390	1 Gallon Groundcover	42	EA	$ 10.00	$ 420					$ -
Drip irrigation	832	SF	$ 0.50	$ 416	Drip irrigation	252	SF	$ 0.50	$ 126					$ -
Boulders	37	EA	$ 325.00	$ 12,025	Boulders	11	EA	$ 325.00	$ 3,575					$ -
Decomposed Granite	832	EA	$ 0.25	$ 208	Decomposed Granite	252	EA	$ 0.25	$ 63					$ -
SUB-TOTAL			TOTAL	$ 1,515,880	SUB-TOTAL			TOTAL	$ 113,105	SUB-TOTAL			TOTAL	$ 326,728

Trail Type

Conservation/Interpretation Trail					Equestrian Corridor					Trail Element: Corridor Prototype Designs				
ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total
4' wide stabilized decomposed granite	0	SF	$ 0.35	$ -	4' wide cleared/improved corridor	92,116	SF	$ 0.05	$ 4,606	Gateway	4	EA	$ 51,625	$ 206,500
Accent concrete/paving at nodes	0	SF	$ 4.00	$ -					$ -	Primary Staging Area/Gateway	0	EA	$ 326,340	$ -
Site/seat wall (20" High x 8" Wide)	0	LF	$ 100.00	$ -					$ -	Secondary Staging Area	1	EA	$ 64,190	$ 64,190
Trash Receptacle	0	EA	$ 400.00	$ -					$ -	Trail Connection	4	EA	$ 30,334	$ 121,336
Drinking Fountain	0	EA	$ 1,500.00	$ -					$ -	Riverbed Access Ramp	1	EA	$ 50,000	$ 50,000
Informational/directional signage	0	EA	$ 2,000.00	$ -					$ -	Future Roadway Bridge	0	EA	*	
Lighted bollards	0	EA	$ 1,500.00	$ -					$ -	Prefabricated Pedestrian Bridge	1	EA	$ 1,500,000	$ 1,500,000
15 Gallon Trees	0	EA	$ 125.00	$ -					$ -	Transit Connection Node	0	EA	$ 55,103	$ -
5 Gallon Shrubs	0	EA	$ 20.00	$ -					$ -	Trail Underpass Improvements	2	EA	$ 500,000	$ 1,000,000
1 Gallon Groundcover	0	EA	$ 10.00	$ -					$ -	At-Grade Primary Trail Crossing	0	EA	**	varies
Drip irrigation	0	SF	$ 0.50	$ -					$ -					
SUB-TOTAL			TOTAL	$ -	SUB-TOTAL			TOTAL	$ 4,606	SUB-TOTAL			TOTAL	$ 2,942,026

NOTE: All primary trail costs for the New River and Lower Agua Fria River Corridor trail segments are based on recommended, typical 12-foot wide trail. These costs are based on year 2001 figures.

SEGMENT 14 APPROXIMATE TOTAL	TOTAL	$4,903,000

* Not included in costs

** Cost will vary by location and local preference (pavement/trail markings and signage vs. signaliziatic

TRAIL SEGMENT: S-15

Trail Type

PRIMARY TRAIL					Secondary Trail					Neighborhood/Transit/Connector Trail				
ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total
12' wide asphalt/concrete	562,020	SF	$ 1.75	$ 983,535	8' wide stabilized decomposed granite	125,736	SF	$ 0.35	$ 44,008	8' wide asphalt/concrete	157,672	SF	$ 1.75	$ 275,926
Accent concrete/paving at nodes	770	SF	$ 4.00	$ 3,080	Accent concrete/paving at nodes	233	SF	$ 4.00	$ 932	Informational/directional signage	1	EA	$ 2,000.00	$ 2,000
Site/seat wall (20" High x 8" Wide)	53	LF	$ 100.00	$ 5,300	Site/seat wall (20" High x 8" Wide)	16	LF	$ 100.00	$ 1,600	Lighted bollards	2	EA	$ 1,500.00	$ 3,000
Trash Receptacle	5	EA	$ 400.00	$ 2,000	Trash Receptacle	1	EA	$ 400.00	$ 400	15 Gallon Trees	4	EA	$ 125.00	$ 500
Drinking Fountain	5	EA	$ 1,500.00	$ 7,500	Drinking Fountain	1	EA	$ 1,500.00	$ 1,500	5 Gallon Shrubs	18	EA	$ 20.00	$ 360
Informational/directional signage	5	EA	$ 2,000.00	$ 10,000	Informational/directional signage	1	EA	$ 2,000.00	$ 2,000	1 Gallon Groundcover	27	EA	$ 10.00	$ 270
Lighted bollards	9	EA	$ 1,500.00	$ 13,500	Lighted bollards	3	EA	$ 1,500.00	$ 4,500	Drip irrigation	164	SF	$ 0.50	$ 82
15 Gallon Trees	18	EA	$ 125.00	$ 2,250	15 Gallon Trees	6	EA	$ 125.00	$ 750					$ -
5 Gallon Shrubs	92	EA	$ 20.00	$ 1,840	5 Gallon Shrubs	8	EA	$ 20.00	$ 160					$ -
1 Gallon Groundcover	139	EA	$ 10.00	$ 1,390	1 Gallon Groundcover	42	EA	$ 10.00	$ 420					$ -
Drip irrigation	832	SF	$ 0.50	$ 416	Drip irrigation	252	SF	$ 0.50	$ 126					$ -
Boulders	37	EA	$ 325.00	$ 12,025	Boulders	11	EA	$ 325.00	$ 3,575					$ -
Decomposed Granite	832	EA	$ 0.25	$ 208	Decomposed Granite	252	EA	$ 0.25	$ 63					$ -
SUB-TOTAL			TOTAL	$ 1,043,044	SUB-TOTAL			TOTAL	$ 60,034	SUB-TOTAL			TOTAL	$ 282,138

Trail Type

Conservation/Interpretation Trail					Equestrian Corridor					***Trail Element***				
ITEM	Quantity	Unit	Cost per Unit	Total	ITEM	Quantity	Unit	Cost per Unit	Total	Corridor Prototype Designs				
4' wide stabilized decomposed granite	0	SF	$ 0.35	$ -	4' wide cleared/improved corridor	132,932	SF	$ 0.05	$ 6,647	ITEM	Quantity	Unit	Cost per Unit	Total
Accent concrete/paving at nodes	0	SF	$ 4.00	$ -					$ -	Gateway	5	EA	$ 51,625	$ 258,125
Site/seat wall (20" High x 8" Wide)	0	LF	$ 100.00	$ -					$ -	Primary Staging Area/Gateway	0	EA	$ 326,340	$ -
Trash Receptacle	0	EA	$ 400.00	$ -					$ -	Secondary Staging Area	1	EA	$ 64,190	$ 64,190
Drinking Fountain	0	EA	$ 1,500.00	$ -					$ -	Trail Connection	5	EA	$ 30,334	$ 151,670
Informational/directional signage	0	EA	$ 2,000.00	$ -					$ -	Riverbed Access Ramp	2	EA	$ 50,000	$ 100,000
Lighted bollards	0	EA	$ 1,500.00	$ -					$ -	Future Roadway Bridge	0	EA	*	
15 Gallon Trees	0	EA	$ 125.00	$ -					$ -	Prefabricated Pedestrian Bridge	0	EA	$ 1,500,000	$ -
5 Gallon Shrubs	0	EA	$ 20.00	$ -					$ -	Transit Connection Node	3	EA	$ 55,103	$ 165,309
1 Gallon Groundcover	0	EA	$ 10.00	$ -					$ -	Trail Underpass Improvements	3	EA	$ 500,000	$ 1,500,000
Drip irrigation	0	SF	$ 0.50	$ -					$ -	At-Grade Primary Trail Crossing	0	EA	**	varies
SUB-TOTAL			TOTAL	$ -	SUB-TOTAL			TOTAL	$ 6,647	SUB-TOTAL			TOTAL	$ 2,239,294

NOTE: All primary trail costs for the New River and Lower Agua Fria River Corridor trail segments are based on recommended, typical 12-foot wide trail. These costs are based on year 2001 figures.

SEGMENT 15 APPROXIMATE TOTAL	TOTAL	$3,631,000

* Not included in costs

** Cost will vary by location and local preference (pavement/trail markings and signage vs. signaliziatic

TRAIL SEGMENT: S-16

Trail Type — PRIMARY TRAIL

ITEM	Quantity	Unit	Cost per Unit	Total
12' wide asphalt/concrete	915,084	SF	$ 1.75	$ 1,601,397
Accent concrete/paving at nodes	770	SF	$ 4.00	$ 3,080
Site/seat wall (20" High x 8" Wide)	53	LF	$ 100.00	$ 5,300
Trash Receptacle	5	EA	$ 400.00	$ 2,000
Drinking Fountain	5	EA	$ 1,500.00	$ 7,500
Informational/directional signage	5	EA	$ 2,000.00	$ 10,000
Lighted bollards	9	EA	$ 1,500.00	$ 13,500
15 Gallon Trees	18	EA	$ 125.00	$ 2,250
5 Gallon Shrubs	92	EA	$ 20.00	$ 1,840
1 Gallon Groundcover	139	EA	$ 10.00	$ 1,390
Drip irrigation	832	SF	$ 0.50	$ 416
Boulders	37	EA	$ 325.00	$ 12,025
Decomposed Granite	832	EA	$ 0.25	$ 208
SUB-TOTAL			TOTAL	$ 1,660,906

Secondary Trail

ITEM	Quantity	Unit	Cost per Unit	Total
8' wide stabilized decomposed granite	407,832	SF	$ 0.35	$ 142,741
Accent concrete/paving at nodes	233	SF	$ 4.00	$ 932
Site/seat wall (20" High x 8" Wide)	16	LF	$ 100.00	$ 1,600
Trash Receptacle	1	EA	$ 400.00	$ 400
Drinking Fountain	1	EA	$ 1,500.00	$ 1,500
Informational/directional signage	1	EA	$ 2,000.00	$ 2,000
Lighted bollards	3	EA	$ 1,500.00	$ 4,500
15 Gallon Trees	6	EA	$ 125.00	$ 750
5 Gallon Shrubs	8	EA	$ 20.00	$ 160
1 Gallon Groundcover	42	EA	$ 10.00	$ 420
Drip irrigation	252	SF	$ 0.50	$ 126
Boulders	11	EA	$ 325.00	$ 3,575
Decomposed Granite	252	EA	$ 0.25	$ 63
SUB-TOTAL			TOTAL	$ 158,767

Neighborhood/Transit/Connector Trail

ITEM	Quantity	Unit	Cost per Unit	Total
8' wide asphalt/concrete	0	SF	$ 1.75	$ -
Informational/directional signage	0	EA	$ 2,000.00	$ -
Lighted bollards	0	EA	$ 1,500.00	$ -
15 Gallon Trees	0	EA	$ 125.00	$ -
5 Gallon Shrubs	0	EA	$ 20.00	$ -
1 Gallon Groundcover	0	EA	$ 10.00	$ -
Drip irrigation	0	SF	$ 0.50	$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
SUB-TOTAL			TOTAL	$ -

Trail Type — Conservation/Interpretation Trail

ITEM	Quantity	Unit	Cost per Unit	Total
4' wide stabilized decomposed granite	0	SF	$ 0.35	$ -
Accent concrete/paving at nodes	0	SF	$ 4.00	$ -
Site/seat wall (20" High x 8" Wide)	0	LF	$ 100.00	$ -
Trash Receptacle	0	EA	$ 400.00	$ -
Drinking Fountain	0	EA	$ 1,500.00	$ -
Informational/directional signage	0	EA	$ 2,000.00	$ -
Lighted bollards	0	EA	$ 1,500.00	$ -
15 Gallon Trees	0	EA	$ 125.00	$ -
5 Gallon Shrubs	0	EA	$ 20.00	$ -
1 Gallon Groundcover	0	EA	$ 10.00	$ -
Drip irrigation	0	SF	$ 0.50	$ -
SUB-TOTAL			TOTAL	$ -

Equestrian Corridor

ITEM	Quantity	Unit	Cost per Unit	Total
4' wide cleared/improved corridor	111,576	SF	$ 0.05	$ 5,579
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
SUB-TOTAL			TOTAL	$ 5,579

Trail Element — Corridor Prototype Designs

ITEM	Quantity	Unit	Cost per Unit	Total
Gateway	7	EA	$ 51,625	$ 361,375
Primary Staging Area/Gateway	2	EA	$ 326,340	$ 652,680
Secondary Staging Area	0	EA	$ 64,190	$ -
Trail Connection	2	EA	$ 30,334	$ 60,668
Riverbed Access Ramp	0	EA	$ 50,000	$ -
Future Roadway Bridge	0	EA	*	
Prefabricated Pedestrian Bridge	1	EA	$ 1,500,000	$ 1,500,000
Transit Connection Node	0	EA	$ 55,103	$ -
Trail Underpass Improvements	0	EA	$ 500,000	$ -
At-Grade Primary Trail Crossing	0	EA	**	varies
SUB-TOTAL			TOTAL	$ 2,574,723

NOTE: All primary trail costs for the New River and Lower Agua Fria River Corridor trail segments are based on a recommended, typical 12-foot wide trail.

SEGMENT 16 APPROXIMATE TOTAL	TOTAL	$4,401,000

* Not included in costs

** Cost will vary by location and local preference (pavement/trail markings and signage vs. signaliziatic

References

A Selected Sample of Prehistoric and Historic Sites of the Western Salt River Valley, Arizona. James B. Rodgers and Nancy Dallett. 2000.

American Greenways Program Fact Sheets. American Greenways Program (www.conservation fund.org.)

Arts Oasis, A Campus Plaza for the University of Arizona. Wheat Gallaher Associates. 1995.

Avondale General Plan. City of Avondale. n.d.

Betty and the Bluestakes: Los Callejones Master Plan. 1992.

Bicycle Transportation System Plan. Maricopa County - Department of Transportation. 1999.

Bikeways in the Metropolitan Phoenix Area (Map). Maricopa Association of Governments. 1997.

Comprehensive Plan. Maricopa County. 2020 Eye to the Future. 1997.

Conflicts on Multiple-Use Trails: Synthesis of the Literature and State of the Practice. The Federal Highway Administration and The National Recreational Trails Advisory Committee. 1994.

Conjunctive Plan. City of Avondale. 1993.

County Profile. Maricopa County. 2020 Eye to the Future. 1994.

Desert Spaces: Environmentally Sensitive Development Areas - Policies and Design Guidelines. Maricopa Association of Governments. 1999.

Desert Spaces: An Open Space Plan for the Maricopa Association of Governments. Maricopa Association of Governments. 1995.

Directory of Active Mines in Arizona. Arizona Department of Mines and Mineral Resources. 2000.

Downtown Land Use and Circulation Study. BRW, Inc. 1990.

Draft Trail Design, Construction, and Maintenance Guidelines. Arizona State Parks, State Trails Program, 1993.

Eastern Pima County Trail System Master Plan. "*Phase One: Acquisition, Design and Development Priorities*." Pima County Parks and Recreation Department. August 1989.

Environmental Element Report. Maricopa County. 2020 Eye to the Future. n.d.

Flagstaff Public Art Master Plan. "Design Collaborations." Margaret Joplin & Susan Gamble. 1995.

General Plan for Phoenix - 1985 - 2000. City of Phoenix. 1994.

General Plan: Peripheral Areas C and D. City of Phoenix Planning Department. October 1987.

General Plan Summary and Land Use Map. City of Phoenix. 1994.

Glendale Bicycle Map. City of Glendale. 1997.

Glendale General Plan: Development Guide. City of Glendale. 1996.

Historical Overview & Population Background Report. Maricopa County. 2020 Eye to the Future. 1996.

I-17 Frontage Road: Carefree Highway to New River Road - Draft Environmental Overview. Maricopa County. 1999

Impact of Rail-Trails. National Park Service. 1992.

MAG Regional Bicycle Plan. MAG 1999.

Middle New River Watercourse Master Plan Study. The Flood Control District of Maricopa County. 1999.

New River Area Plan. Maricopa County. 2020 Eye to the Future. 1998.

Northeast Valley Area Transportation Study. Maricopa County. 1996.

Northwest Valley Transportation Study. Maricopa County. 2000.

Parks, Recreation & Open Space Master Plan. City of Peoria. 1996.

Pedestrian Area Policies and Design Guidelines. MAG. 1995.

People Places (map). City of Phoenix - Recreation and Library Department, 1996.

Peoria Comprehensive Master Plan. City of Peoria - Arizona. 1998.

Peoria Comprehensive Master Plan - Transportation Map. City of Peoria. 1998.

Phoenix & Vicinity Street Finder. Rand McNally. 1994.

Project for Public Spaces. NBBJ Group/Gresham Larson, Drake & Associates. Barbara Grygutis: "Urban Design, Development & Management Strategies for the Tucson Arts District: Findings, Opportunities, & Implementation." 1988.

Public Art Map: A Tour of the King County Public Art Collection. King County (Washington) Public Art Program. 1999.

Public Art Plan for Metropolitan Tucson. Tucson Pima Arts Council (Public Art and Community Design Committee.) 1994.

Public Art Works: The Arizona Models. Phoenix Arts Commission. 1992.

Rail Trails and Community Sentiment: Review of 125 U.S. Rail-Trails. Rails-to-Trails Conservancy (www.rail-trails.org).

Rivers Master Plan. City of Peoria. 1999.

Rivers Master Plan - Executive Summary. City of Peoria. 1999.

River Parks Master Plan. Pima County Department of Transportation & Flood Control District. 1996.

Section 7.3: Design Standards and Policies Manual for Non-Paved Trails. City of Scottsdale. October 1999.

7.5 Minute topographical series map of the study area. United States Geological Survey (USGS).

Southwest Valley Transportation Study. Maricopa County. 1995.

Sub-County Population Projections For Maricopa County By Municipality. Maricopa Association of Governments. 1997.

Sun Circle Trail. Maricopa County. n.d.

"*The Art of the Infrastructure,*" *Civil Engineering, Teresa Austin*. September 1994.

The El Rio Vision: Multi-Agency Review and Response to Planning and Policy Opportunities on the Gila River. (Executive Summary.) 2000.

The Value of the Arts (President's Committee on the Arts and the Humanities). Elizabeth Murfee. n.d.

Tonopah Area Plan: Draft 2.0. Maricopa County. 2020 Eye to the Future. 2000.

Trail Construction and Maintenance Notebook. U.S.D.A. Forest Service. 1996.

Trails Management Manual. Maricopa County Recreation Services Department. 1995.

Trails for the 21st Century: A Planning, Design and Management Manual for Multi-Use Trails. Rails to Trails Conservancy. 1993.

Trails Master Plan. City of Peoria. 1998.

Tres Rios Greenway. City of Avondale. 1996.

West Valley Recreation Corridor: Design Concept Report - Executive Summary. Flood Control District of Maricopa County. 1999.

West Valley Recreation Corridor: Design Concept Report. Flood Control District of Maricopa County. 1999.

White Tank Grand Avenue: Draft 2.0. Maricopa County. 2020 Eye to the Future. 1999.

Zoning Ordinance. City of Phoenix. 1997.

Glossary Of Terms

AASHTO - American Association of State Highway and Transportation Officials

Access Point - a specific site that connects to a trail or to destinations or points of interest. Access points are divided into three categories; primary gateways, secondary gateways, and access nodes depending on level of activity of the site.

Access Node - a site that connects to the trail, or to neighborhoods and open spaces. These sites have a low level of activity.

Active Area - a developed area that serves high numbers of people.

ADA - Americans with Disabilities Act.

ADOT - Arizona Department of Transportation

Aesthetic - pertaining to the beautiful, as opposed to the useful, scientific, or emotional.

Arterial/Trail Crossing - an unimpeded circulation route across arterial streets and railroad tracks.

Commercial/Activity Node - a site or location along a river corridor trail system, creating a pedestrian oriented focal point of "activity" or commercial/retail/entertainment amenities for both locals and visitors alike.

Connector Trail - a linkage or connecting trail which interconnects primary and secondary trails with one another.

Conservation Area - a "passive" activity trail located in an undeveloped area that meanders near and within landscapes set aside for habitat preservation, watershed protection, or within man-made landscapes such as parks or recreational areas, serving low numbers of people

Conservation/Interpretative Trail - usually an unpaved trail located in an undeveloped, open area that serves low numbers of people.

Decomposed Granite - a native, crushed granite rock known for its permeability and used as a concrete substitute for building natural trails, driveways, and walkways.

Design - the planned organization of lines, shapes and masses, colors, textures and space in a work of art.

Design Team - people who work together to plan and implement development projects, such as architects, artists, urban planners, government officials, stakeholders, and community residents.

Entryway - site that accesses the trail or other special point of interest.

Environmental Art - artworks that highlight some aspect of the environment or are closely integrated into the environment.

Equestrian Corridor - a cleared or improved portion of the sandy river bottom allowing for equestrian access into and through the river corridor trail system.

FCDMC - Flood Control District of Maricopa County.

Gateway - access point to a trail or other special points of interest that often include large works of public art.

Grade - the degree to which a trail rises or falls over a linear distance.

Interpretive Art - artwork that explains, translates or interprets the meaning of an idea, issue, time or culture.

Kinetic Art - artwork that involves the use of moving, often motorized, parts, shifting lights, or sounds.

Levee - a compacted embankment built alongside a river for the purpose of preventing high water fro flooding the adjoining land.

Light Piece - artwork that includes lighting for a path, street, etc.

MAG - Maricopa Association of Governments.

MPO - Municipal Planning Organization.

Monumental Art- artwork that is large scale, massive, enduring, historically notable, important, and of lasting value

Multi-Use Trail - A trail that is used by more than one user group, including, but not limited to, equestrians, pedestrians, bicyclists, hikers and joggers.

MUTCD - Manual on Uniform Traffic Control Devices

Neighborhood Marker - artwork that relates to the style, character, and define boundaries of a neighborhood.

Neighborhood/Transit Connector - a tertiary trail that connects surrounding neighborhoods, schools and adjacent transit stops and Park-N-Ride facilities to trails located within the 42-mile trail corridor system.

Overpass Connection - a crossing of a roadway and trail system at different levels where clearance to traffic on the lower level is obtained by elevating the higher level over the roadway, usually by means of a footbridge.

Passive Area - a mixed development area that serves moderate numbers of people.

Primary Gateway - a site that accesses or connects a trail to destinations or points of interest that serves high numbers of people.

Primary Staging Area - a large trailhead which acts as a destination point for user to park vehicles and access the primary trail system.

Primary Trail - a paved, main pathway that serves high numbers of people in a trail system. The primary trail is typically paved, but may be unpaved in undeveloped or non-developable areas.

Public Art - artwork that is readily accessible to the public, usually high numbers of people, regardless of whether the work is privately or publicly funded and maintained.

Riparian - along a watercourse, arroyo, seep, pond, or other location where the availability of water is increased. The community of the watercourse, its vegetation and its wildlife are collectively referred to as a riparian area.

Riprap - material, usually rock, placed on slope or bank to prevent erosion.

Secondary Gateway - a site that accesses or connects the trail to destinations or points of interest that serves moderate numbers of people.

Secondary Staging Area - a smaller, less formal trailheads which acts as a destination point for users to park vehicles and horse trailers and access a secondary trail system.

Secondary Trail - a paved or unpaved pathway that connects to and from the primary trail along the top of a riverbank, or onto terraces looping underneath bridges.

Signage- markers that convey information and/or indicate locations.

Terraces - trails that are built in the 25, 50 and 100-year flood plain and therefore, have varying degrees of flood risks resulting in maintenance and repairs.

Trail - a marked or established path or route.

Trail Connection - an appropriate treatment that terminates and transitions individual trail types, as well as appropriate methods to treat the intersection of two or more trails.

Trailhead - the beginning or ending access point to a trail, often accompanied by various trail support facilities such as horse trailer and regular vehicle parking spaces, hitching rails, corrals, bike racks, shade ramadas, picnic tables, drinking fountains, water troughs, restrooms, directional and informational signing and entrance gates.

Transit Stop - a point at which public transit and a trail interface or connect.

Underpass Connection - a crossing of a roadway and trail system at different levels where clearance to traffic on the upper level is obtained by lowering the trail system beneath the roadway

Weir - an overflow structure built according to specific design standards across an open channel to measure the flow of water.